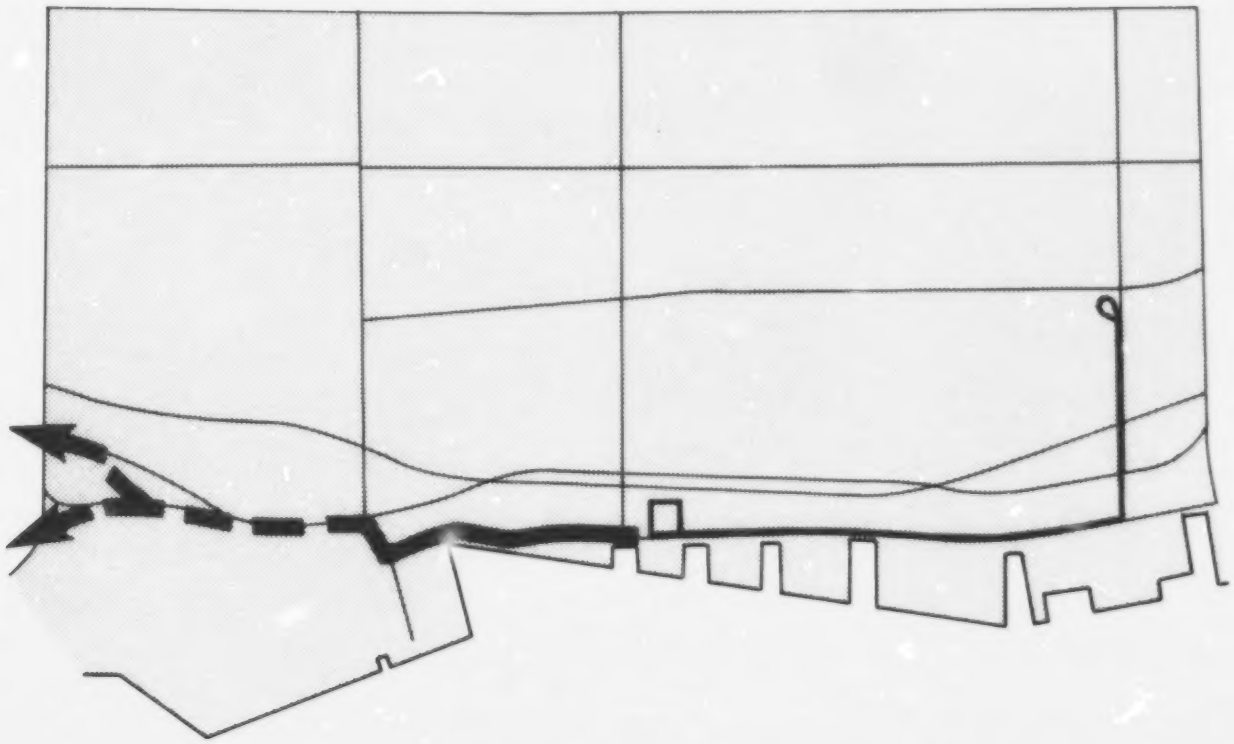
Harbourfront L.R.T. Extension
Study Of Potential Alignments



Metropolitan Toronto
Toronto Transit Commission

June 1988

HARBOURFRONT LRT EXTENSION

STUDY OF POTENTIAL ALIGNMENTS

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Municipality of Metropolitan Toronto
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1.0 INTRODUCTION

1.1 Background

Proposals for Exhibition Place trade facilities, evolving plans for the 1996 Olympics and 2000 World's Fair, a review of Ontario Place development, the Harbourfront review by the Federal Government and an overall growing awareness of the need to coordinate proposals of all levels of government in the waterfront area have drawn specific attention to the need for improved transit along the waterfront, which would eventually link the various recreational and other special activities (e.g. Island Airport, future trade centre at Exhibition Place), via a direct connection to Union Station, the hub of Metropolitan Toronto's rapid transit and the regional commuter rail systems.

During the review of a proposed commercial/residential development at 441 Queen's Quay (southwest corner of the Queen's Quay/Spadina Avenue intersection), Metropolitan staff identified that the building, as proposed, would preclude the widening of Queen's Quay West and, therefore, preclude an extension of the exclusive right-of-way of the Harbourfront LRT (HLRT) line west of Spadina Avenue, ultimately to the vicinity of Exhibition Place and Ontario Place. Consequently, Metropolitan Council, at its meeting of February 16, 1988, adopted Clause No. 6 of Report No. 2 of the Economic Development and Planning Committee (EDPC) which recommended that City of Toronto Council be requested to:

(1) amend the Spadina Sub-Area Plan to provide for a sufficient setback from the centre line of Queen's Quay to accommodate an exclusive transit right-of-way for the future extension of the Harbourfront LRT line; and

(2) amend the development drawings for the No. 441 Queen's Quay development proposal so that they will be in substantial

conformity with the Sub-Area Plan as so amended to ensure that the exclusive transit right-of-way is protected.

In order to protect an exclusive transit right-of-way which would provide for a future extension of the Harbourfront LRT, amendments to the Metropolitan and City Official Plans would likely be necessary. Consequently, the Technical Transportation Planning Committee (TTPC) proposed a study of alignment options in the Harbourfront area west of Spadina Avenue. The Economic Development and Planning Committee of Metropolitan Council authorized Metropolitan and Toronto Transit Commission staff to undertake an in-house study of alignment options. The TTPC in its report to the EDPC, recommended that City of Toronto Council be requested to authorize the participation of staff from City of Toronto Planning and Development and Public Works Departments in the study of alignment options for the extension of the Harbourfront LRT line. The Economic Development and Planning Committee at its meeting of March 2, 1988 adopted this recommendation.

In addition, Councillor J. Pantalone presented a recommendation to the EDPC at the March 2, 1988 meeting, that options for extension of the HLRT west of Exhibition and Ontario Place should also be examined. This recommendation was approved by the Committee. This study investigates alignment options east of Exhibition Place only. Examination of alignment options west of Exhibition Place will be undertaken and reported to the EDPC at a later date. All alternatives examined in the study have the potential to be extended west of Exhibition Place/Ontario Place.

The City Services Committee of City of Toronto Council, approved the participation of City staff in a study of various alignment options for a possible westerly extension of the Harbourfront LRT line, at its meeting of March 22, 1988.

1.2 Study Purpose

The report which was submitted by the TTPC and approved by the EDPC at its meeting on March 2, 1988, recommended that as the next step toward the protection of an exclusive right-of-way, a study should comprehensively evaluate alignment options for the section between Spadina Avenue and Bathurst Street. The purpose of this study has therefore been to undertake a comprehensive analysis of various alignment options in this area and to recommend a transit right-of-way that should be protected for a future Harbourfront LRT extension.

1.3 Study Area

The study area, illustrated on Figure 1, consists of the Harbourfront/Railway Lands area bounded by Front Street on the north, Spadina Avenue on the east, Lake Ontario on the south and Strachan Avenue on the west. Since future development plans for Ontario Place and Exhibition Place are unknown at this time, the Working Committee decided that Strachan Avenue would be an appropriate westerly terminus for the analysis of the alignment options. The determination of alignments west of Strachan Avenue and the location of the terminus of the HLRT can await until the future land uses of Exhibition Place/Ontario Place have been finalized.

1.4 Existing and Future Conditions Within the Study Area

1.4.1 Existing and Proposed Development

The study area is made up of the following sub-areas:

1. Railway Lands - There is no existing development in Precincts A, 8, 9, 10, 11, 12 and 13. However, the Skydome is currently under construction in Precinct A. Maximum permitted development in these precincts is 426 933 square metres of office; 82 678 square metres of other non-residential and 5021 residential units;

2. Harbourfront - Within the study area Harbourfront consists of the Spadina and Bathurst Quays. Spadina Quay development currently consists of 15 200 square metres of non-residential uses and 102 residential units. Proposed additional development in Spadina Quay includes 1 184 square metres of non-residential uses and 120 residential units. Bathurst Quay development consists of non-residential uses (23 344 square metres), and 648 residential units. The MTV/Channel 47 building is part of the Bathurst Quay existing non-residential development. Proposed additional development for Bathurst Quay consists of 521 residential units. Both the Spadina and Bathurst Quays have public parks;

   In addition to the existing and proposed development described above, 62 000 square metres of development (approximately 7 000 square metres of non-residential and 620 residential units) is permitted within Harbourfront under the current Spadina Quay and Bathurst Quay Sub-Area Plans. Currently, there are no proposals for this development potential.

   Huang and Danckzay Limited have submitted a proposal to develop 730 residential units and 1 350 square metres of non-residential uses on a site at 250 Stadium Road. This site is located just outside of Harbourfront, but is within the study area.

3. The Loblaws site (northeast corner of Bathurst Street and Lake Shore Boulevard and west of Bathurst Street north of the Gardiner Expressway) - currently this site is abandoned, however, IPCF Properties Inc. has submitted a proposal to the City of Toronto to develop 131 579 square metres of non-residential uses on this site;

4. The Island Airport

5. Molson's Properties (60 428 square metres of existing industrial uses);

6. Ontario Place - Ontario Place is primarily a seasonal recreational attraction with limited year round activities. The park has no current plans to expand, however, there has been some discussion of operating a greater proportion of the park year round; and

7. Exhibition Place - Exhibition Place hosts both seasonal sports events and year-round trade shows. Major sporting events are scheduled to relocate to the Skydome in 1989. While plans have not been finalized with respect to intensification of uses at Exhibition Place, a proposal call for an additional 67 750 square metres (750,000 square feet) of exhibit space is expected to be issued shortly.

It is also important to note that in February, 1988, Toronto City Council imposed an interim holding by-law on development in the Harbourfront area. Consequently, no new developments are permitted until such time as the holding by-law has been lifted. Five current development proposals were deferred:

1. 11 Stadium Road (Harbours I - residential);
2. 650 Queen's Quay West (Harbours II - residential);
3. 350 Queen's Quay West (Link Building - non residential);
4. 441 Queen's Quay west (residential and non-residential); and
5. 385 Queen's Quay West (residential and non-residential)

The first two developments have been approved by City Council, and could proceed once the holding by-law is removed and building permits have been obtained. The third, 350 Queen's Quay, has recently received final City Council approval and can now proceed. The mixed residential/non-residential buildings at 441 and 385 Queen's Quay West are both in the review stages and have therefore not obtained final City Council approval. Figure 2 illustrates the existing development areas and the developments affected by the holding by-law.

1.4.2 Existing and Proposed Transit Service

Public transit service is currently provided to the study area by the Bathurst streetcar (511) and the Spadina Avenue bus (77). The Bathurst streetcar service runs south on Bathurst Street from Bathurst Station on the Bloor subway to Fleet Street and along Fleet Street to the existing turnback loop at Exhibition Place. The Spadina bus operates south from Spadina Station on the Bloor subway to Wellington Street, with a branch to Yonge Street via Queen's Quay. Limited service is also provided by the Church Street bus (19) which operates via Front Street and parallels the Bathurst streetcar service south of Front Street to Exhibition Place.

The Harbourfront LRT (HLRT) is currently under construction and will provide service along Queen's Quay West from Union Station to a turn back loop at Spadina Avenue. The HLRT is scheduled for completion by the end of 1989.

Metropolitan and TTC staff, with the aid of a consultant and the Spadina Transit Consultative Committee, have recently completed a study of transit alternatives to serve the Spadina Sub-centre of the Railway Lands. A staff report was submitted to a joint meeting of the Economic Development and Planning and Transportation Committees on June 8, 1988 recommending approval of a Spadina LRT service in principle and requesting authority to undertake studies necessary to complete the environmental assessment. This service would operate south from the Spadina Station on the Bloor subway line to either the Spadina loop on Queen's Quay or continue easterly along Queen's Quay and northerly via Bay Street to Union Station. The report also recommended that TTC investigate the use of express bus service and peak period reserved bus lanes on Spadina Avenue until such time as the Spadina LRT is in place.

The existing and future transit services in the study area are illustrated on Figure 1.

1.5 Study Approach

A Working Committee, made up of staff from the following agencies met on a regular basis and reported to the TTPC, which acted as the Steering Committee for this study:

- City Planning and Development Department;
- City Public Works Department;
- City Parks and Recreation Department;
- Toronto Transit Commission;
- Ministry of Transportation, Ontario;
- Metropolitan Department of Roads and Traffic Department;
- Metropolitan Parks and Property Department;
- Metropolitan Planning Department (Study Coordinator).

Due to the limited time available for this study, work was shared by all agencies, and their cooperation in the study is greatly appreciated. The following briefly outlines the study activities:

1. Problem identification and justification of an alignment study;
2. Identification of possible alignments and selection of evaluation criteria;
3. Analysis of Alignments
   (a) projection and analysis of ridership demand for each alignment;
   (b) determination of the physical feasibility of alignments;
   (c) determination of operational feasibility of options in terms of roads and transit;
   (d) identification of property, development and environmental impacts; and
   (e) costing of alignments.
4. Evaluation of alternatives;
5. Selection of preferred alignment;
6. Recommendation of preferred alignment for protection; and
7. Preparation of reports.

2.0 DEMAND OVERVIEW AND TECHNOLOGY REVIEW

2.1 Problem Statement

Ongoing development of the Harbourfront area west of Spadina Avenue and the potential intensified development of Ontario Place and Exhibition Place have raised questions regarding a possible extension of the Harbourfront LRT transit service (HLRT) currently under construction between Union Station and Spadina Avenue via Bay Street and Queen's Quay. Based upon existing and committed development in the area, the construction of an extension of the HLRT cannot be justified at this time. However, it is prudent for the government agencies responsible for the development of the Harbourfront/Ontario Place/Exhibition Place area and for the provision of transit services to ensure that ongoing and future development does not physically preclude an extension of the HLRT transit service. Therefore, this study will examine various alignment/technology alternatives west of Spadina Avenue to identify a preferred alignment and technology for extension of the HLRT, given that the HLRT will initially terminate at Spadina Avenue and Queen's Quay. Once identified it is expected that the appropriate agencies would initiate any official plan amendments that may be required in order to protect the alignment.

2.2 Demand Overview

The potential transit demands to Exhibition Place/Ontario Place have been reviewed to ascertain the level of transit service required to accommodate future developments.

At this time there are no firm proposals for modifications to Exhibition Place/Ontario Place, except for the relocation of major sporting events from Exhibition Stadium to the Skydome and a proposal call for expanded exibit space at Exhibition Place. Therefore, future travel demand to Exhibition Place/Ontario Place will be examined based upon the following five possible future scenarios:

(i) existing demand - without Stadium events;
(ii) future demand with possible increases in Exhibition Place exhibit space for trade shows;
(iii) future demand with possible year round operation of Ontario Place;
(iv) future demand with possible Olympic Games (1996); and
(v) future demand with a possible World's Fair (2000).

These scenarios represent a wide range of possible land use configurations with resultant low to high future transit demands. Details of the ridership demand calculations are presented in Appendix A.

Table 1 summarizes future potential peak hour, peak direction transit ridership from the east to/from Exhibition Place/Ontario Place for the five scenarios. The first three scenarios, existing demand, expanded exhibit space and year round operations of Ontario Place, generate peak hour peak direction ridership that can be accommodated on TTC's existing services to Exhibition Place. The Olympics could, based upon the limited information available, generate ridership of the order of magnitude as the World's Fair scenario; however, additional work would have to be undertaken to confirm this assumption and to determine if, based upon the very short duration of the Olympics (in the order of three weeks), special services could accommodate the demand rather than new transit infrastructure.

The World's Fair scenario would generate very high transit demands over a six month period and would necessitate the need to investigate infrastructure improvements. The very large numbers of transit riders from Union Station to the Exhibition Place that would have to be accommodated (up to 33,000 per hour) requires higher order transit services (special GO Shuttles, LRT and possibly rapid transit). The consultant for the World's Fair investigation concluded that a GO train shuttle service plus an extended HLRT would provide sufficient

capacity to accommodate the demand. An extension of the HLRT could also be connected to a future Spadina LRT to provide improved service from the Bloor subway.

Other possible land use scenarios have been suggested for Exhibition Place/Ontario Place including extensive international trade show developments, expansion of Ontario Place, and residential redevelopment. Details of these types of significant redevelopment of the sites are not available at this time, but it is likely that they could generate transit ridership in the middle range between the low demands of Scenarios (i), (ii) and (iii) and the high demands of Scenarios (iv) and (v).

In total, travel demands from future potential intensification of Exhibition Place/Ontario Place will require higher order transit services. Metropolitan Toronto and the Province of Ontario are currently spending $44 Million to build the Harbourfront LRT line to Spadina Avenue which could be extended to Exhibition Place/Ontario Place, at a fraction of the cost of rapid transit, to provide some of the necessary capacity for these future possible development scenarios. It would, therefore, be appropriate to protect for the extension of HLRT service to Exhibition Place/Ontario Place.

A decision on the timing of the construction of the HLRT extension and whether or not other high order transit service to Exhibition Place/Ontario Place would be required, can await the resolution of the outstanding Exhibition Place/Ontario Place land use issues.

2.3 Technology Review

The previous section identified that future peak hour transit demands to Exhibition Place/Ontario Place from the east could exceed 30,000 passengers per hour and that to accommodate demand of that magnitude, the option of extending the Harbourfront transit service should be protected. Prior to examining different potential alignments

for a possible extension, a review of what transit technology would be most appropriate for the extension of transit service west of Spadina Avenue has been conducted.

The purpose of the review presented below is to determine which transit technology would be appropriate for an extension of the Harbourfront transit service west of Spadina Avenue, given the implementation of the Harbourfront LRT line from Union Station to Spadina Avenue via Queen's Quay in the near future.

Four transit technologies have been examined as potential extensions of the existing Harbourfront service:

(1) buses in mixed traffic;
(2) buses in exclusive right-of-way (curb/centre median);
(3) streetcars in mixed traffic; and
(4) streetcars in exclusive right-of-way (LRT).

These technologies have been reviewed based on the following criteria:

Transportation Service	-	serves demand
	-	passenger convenience
	-	transit operations
Natural Environment	-	air quality
	-	soil/water quality
Social Environment	-	land use
	-	roadway
	-	property access
	-	visual
	-	noise/vibration
Economic Environment	-	commercial
	-	tourism
Cultural Environment	-	cultural/recreational activity

Cost
- capital (including vehicles and property)
- operating

Table 2 presents an overview evaluation of alternative transit technologies available for an extension of the Harbourfront LRT line. The following briefly describes the rationale for the evaluation:

(a) Transportation Service:

- The alternatives that operate in mixed traffic would, because of operational difficulties, be unable to satisfy potential future demands in the Harbourfront corridor. An extension of LRT service will provide two to three times the capacity of mixed traffic services.
- Only the extension of the existing streetcar service would provide good passenger convenience by eliminating any need to transfer at Spadina Avenue.
- Transit operational difficulties would be experienced by all alternatives, except LRT.

(b) Natural Environment Impacts:

- Natural environmental impacts would be experienced as a result of emissions from diesel buses and construction disturbances of local soils.

(c) Social Environmental Impacts:

- Local land use impacts would be restricted to alternatives requiring wider than existing road right-of-ways and is dependent on the alignment chosen.
- Impacts on roadway operations are more significant for mixed traffic operations alternatives and the bus in a centre reserved lane alternative.
- Property access would only be restricted by the streetcar in

reserved right-of-way alternative and would be mitigated by the type of exclusivity chosen in detail design.

- o Visual aesthetics are impacted in the streetcar alternatives because of the overhead electrical plant.
- o Noise and vibration impacts depend on the vehicle type and whether or not the alternative is underground.

(d) Economic Environment Impacts:

- o The only negative economic impacts would be experienced during construction of the streetcar options due to access disruption.

(e) Cultural Environment Impacts:

- o The only cultural impacts would be from a bus in mixed traffic alternative which would provide poor service from the west to the Harbourfront area, thereby reducing the accessibility to cultural activities compared to other alternatives.

(f) Cost:

- o Capital cost measures are relative indices of the magnitude of construction required for the alternative and the cost of vehicles. Vehicle costs depend on the capacity of the service, operational speed and the unit cost of the vehicle. Both streetcar options have higher capital costs than bus options due to higher construction and vehicle costs. Streetcars in mixed traffic have the highest capital cost because, due to slower operating speeds, substantially more vehicles are required to provide capacity equivalent to LRT.
- o Operating costs are higher for alternatives with slower operating speeds resulting from conflicts with anticipated heavy auto traffic volumes.

The two most important factors in the evaluation of technology are capacity requirements and the benefits to passenger convenience. A transfer free service is provided by alternatives which extend the

existing streetcar operations west from Spadina Avenue (alternatives 3 and 4). The other options require a passenger transfer from the HLRT to a different technology.

Between alternatives 3 and 4, the streetcar alternatives, the LRT option ranks higher than a mixed traffic streetcar option in terms of carrying capacity, transportation service, roadway operations and operating cost criteria, and ranks lower in the property impact and access criteria. The LRT alternative ranks first compared to all other options because it would provide the capacity required to serve future potential demands at Exhibition Place/Ontario Place and the best service for the transit rider.

2.4 Summary

Development in the Harbourfront area west of Spadina Avenue is continuing and may preclude an extension of the Harbourfront LRT service west to Exhibition Place/Ontario Place. Future transit demands to Exhibition Place/Ontario Place are unknown at this time because of uncertainties with respect to land use at Exhibition Place/Ontario Place. A number of scenarios have been presented which indicate that demand could be at a level which would require at a minimum, an extension of the Harbourfront LRT plus possibly other higher order transit facilities. Since the Harbourfront LRT service is being constructed to Spadina Avenue, the cost of extending the Harbourfront transit service is low compared to the provision of other high order rapid transit services from Union Station. To provide the level of capacity that would be required for development at Exhibition Place/Ontario Place, and to provide the best service from the transit riders' perspective, any extension should utilize streetcar technology and should operate in an exclusive right-of-way. Therefore, an extension of the Harbourfront LRT line should be protected as an exclusive right-of-way LRT line from Spadina Avenue to Exhibition Place/Ontario Place.

Table 1.

Future Potential Transit Ridership to Exhibition Place from the East

	Scenario	Peak Hour Peak Direction Ridership
(i)	Existing Demand	100-200
(ii)	Expanded Exhibit Space	250-800
(iii)	Year Round Ontario Place Operations	100-200
(iv)	Olympics	- (a)
(v)	World's Fair	11,270 (b)
		33,050 (c)

Notes:

(a) no demand estimates are available for a possible Olympic Games

(b) P.M. Peak hour ridership

(c) World's Fair Site peak hour ridership (10:00 a.m. - 11:00 a.m.)

TABLE 2.

Alternative Transit Service Technology Evaluation

	(1) Buses in Mixed Traffic	(2) Buses in Reserved lanes	(3) Streetcars in Mixed Traffic	(4) LRT
Transportation Service:				
- Satisfies potential demand	No	Yes	No	Yes
- Passenger Convenience	Poor	Poor	Moderate	Good
- Operations	Poor	Moderate	Poor	Good
Natural Environment Impacts:				
- Local Air Quality	Moderate	Moderate	Minor	Minor
- Local Soil Quality	Minor	Minor	Moderate	Moderate
- Groundwater Quality	Minor	Minor	Minor	Minor
Social Environment Impacts:				
- Land Use	Minor	Moderate-Major (Dependent on Alignment)	Minor	Moderate-Major (Dependent on Alignment)
- Roadways	Major	Moderate	Major	Major - Construction Minor - Operation
- Property Access	Minor	Minor	Minor	Moderate
- Visual Aesthetics	Minor	Minor	Moderate	Moderate
- Noise	Moderate	Moderate	Moderate	Moderate
- Vibration	Minor	Minor	Moderate	Moderate
Economic Environment Impact:	Moderate	Minor	Moderate - Construction Minor - Operation	Moderate - Construction Minor - Operation
Cultural Environment Impact:	Moderate	Minor	Minor	Minor
Cost:				
- Capital	Low	Medium	High	High
- Operating	High	Medium	High	Low

3.0 ALIGNMENT OPTIONS

The TTPC report to the March 2, 1988 meeting of the Economic Development and Planning Committee identified four basic alignment options for a westerly extension of the HLRT from the Spadina Avenue/Queen's Quay intersection:

Option 1. Queen's Quay/Bathurst Street/Lake Shore Boulevard;
Option 2. Queen's Quay/Coronation Park;
Option 3. Lake Shore Boulevard; and
Option 4. Spadina Avenue/Esplanade/Molson's Area

The Working Committee examined each alternative alignment and identified sub-options within each. In total, eleven alignments were identified and these are illustrated on Figure 3. The following sections briefly describe each alignment with a more detailed description of each provided in Appendix B.

For all options, a direct connection to a service west of Bathurst Street and a turn back loop south of Queen's Quay should be retained for the Bathurst streetcar.

3.1 Alignment 1 Options (The Queen's Quay/Bathurst/Lake Shore Options)

Alignment 1 options begin at Spadina Avenue and Queen's Quay, and proceed west on Queen's Quay to Portland Street. Two sub-options have been identified from Portland Street. In one sub-option, the LRT would descend into a below grade structure from Portland Street, underpass Bathurst Street and Lake Shore Boulevard, and ascend from a portal on Fleet Street. The LRT would then continue west on Fleet Street to Strachan Avenue. In the other sub-option, the LRT would proceed west from Portland Street to Bathurst Street, continue north to Lake Shore Boulevard and proceed on the south side of Lake Shore Boulevard to Strachan Avenue.

3.2 Alignment 2 Options (The Queen's Quay Options)

Alignment 2 options are identical to alignment 1 options to Portland Street and Queen's Quay. From this point, alignment 2 options would proceed west at grade to Stadium Road. In one sub-obtion the LRT would proceed west from Stadium Road, south of the Dylex property, and then swing north along the east side of the HMCS York Property to Lake Shore Boulevard. From this point the line would continue west to Strachan Avenue along the south side of Lake Shore Boulevard. The other sub-option would proceed west from Stadium Road through private property and in front of the HMCS York property. The LRT would continue west to Strachan Avenue along the water's edge, on the south side of Coronation Park.

3.3 Alignment 3 Options (The Lakeshore Options)

Alignment 3 options begin at Spadina Avenue and Lake Shore Boulevard. Five sub-options were identified. In three sub-options, the LRT would proceed west along the south side of Lake Shore Boulevard. At the Bathurst Street/Lake Shore Boulevard intersection the LRT would be grade separated in two sub-options and at grade in one. From the west side of Bathurst Street, two options would continue west to Strachan Avenue on the south side of Lake Shore Boulevard, and one would swing north and proceed to Strachan Avenue on Fleet Street. In the remaining two sub-options the LRT would proceed west in the centre median of Lake Shore Boulevard, from Spadina Avenue to Strachan Avenue. The only difference between these two sub-options is that one is grade separated at Bathurst Street and Lake Shore Boulevard, while the other one is at grade.

3.4 Alignment 4 Options (The Esplanade Options)

Alignment 4 options begin at Spadina Avenue and Queen's Quay, proceed north to the future Esplanade and continue west along Esplanade to Bathurst Street. At Bathurst Street, one sub-option would continue west through private properties to Fleet Street and

proceed west along Fleet Street to Strachan Avenue. The other sub-option would proceed south on Bathurst Street to Fleet Street and continue along Fleet Street to Strachan Avenue.

4.0 TRAVEL DEMAND

An analysis of ridership demand has been conducted to provide a basis for comparing alignment alternatives. The analysis is based upon existing, approved and proposed residential and non-residential developments within the study area. The developments which formed the basis of the analysis were:

1. The Railway Lands - Precincts A, 8, 9, 10, 11, 12 and 13;
2. Harbourfront - Spadina and Bathurst Quays;
3. Stadium Road Site;
4. Loblaws Proposal - Northeast corner of Bathurst Street and Lake Shore Boulevard and west of Bathurst Street, north and south of the Gardiner Expressway;
5. Toronto Island Airport;
6. Ontario Place - year-round operation; and
7. Exhibition Place - 3 scenarios:
   - o Base Scenario (no added exhibit space)
   - o Scenario A (69 750 sq.m. additional exhibit space)
   - o World's Fair 2000

Details of the analysis are provided in Appendix A.

4.1 The Railway Lands

The demand analysis for the Railway Lands was based upon the maximum development permitted by the Part II Plan, as approved by the Ontario Municipal Board in February, 1987. Of the precincts in the Railway Lands, Precincts A, 8, 9, 10, 11, 12 and 13 would be best served by the HLRT extension via the Esplanade, and hence these precincts were included in the analysis of Alignment 4 options only.

The Part II Plan permits 426 933 square metres of office space and 82 678 square metres of other non-residential uses for these precincts. A total employment of approximately 17,000 would be created by these

uses. The Part II Plan also permits the construction of 5,021 residential units in these precincts and, assuming 2 persons/unit, a population of approximately 10,000 has been estimated.

Total AM peak hour transit trips for Precincts A, 8, 9, 10, 11, 12 and 13 has been calculated to be 4,920 inbound and 2,550 outbound. It should be noted, however, that with regard to Options 4A and 4B, these ridership figures could be overestimated because the circuitous routing of these options may not attract this ridership level.

4.2 Harbourfront

The analysis of transit demand for Harbourfront included existing, proposed and potential uses as specified by the Spadina and Bathurst Quay Sub-Area Plans.

Existing development in Spadina and Bathurst Quays total 38 605 square metres of non-residential uses and 750 residential units. Proposed development includes non-residential uses totalling 1 184 square metres and 641 residential units. In addition to the existing and proposed development, there is 62 000 square metres of development (approximately 7 000 square metres of non-residential uses and 620 residential units) still permitted within the Spadina and Bathurst Quays. Based on these totals, employment and population in this area have been estimated at 1,400 and 4,000 respectively.

A development freeze imposed by the City of Toronto in February, 1988 has delayed the approval of 5 proposals (three of which are located in the Spadina and Bathurst Quays of Harbourfront):

1. 11 Stadium Road (Harbours I) - 289 residential units;
2. 650 Queen's Quay West (Harbours II) - 232 residential units; and
3. 441 Queen's Quay West - 120 residential units and 1 184 square metres of non-residential uses

Although affected by the freeze, these three developments have been included in the transit demand analysis for Harbourfront.

The Spadina and Bathurst Quay developments are estimated to generate 535 total inbound transit trips and 880 outbound transit trips in the A.M. peak hour.

4.3 Stadium Road Site

Huang and Danckzay have submitted a proposal to develop 1 350 square metres of non-residential uses and 730 residential units at 250 Stadium Road, which is located just outside Harbourfront. This development is expected to generate 85 inbound and 310 outbound A.M. peak hour transit trips.

4.4 Loblaws Site

IPCF Properties Inc. has submitted a development proposal for the Loblaws site in the Bathurst Street/Lake Shore Boulevard area. Part of this proposal extends into the south end of the Railway Lands and this part of the proposal has been included in the demand analysis for the Railway Lands. Currently the Loblaws site is abandoned.

The IPCF proposal includes 8 874 square metres of retail uses, 66 916 square metres of office uses, a 600 room hotel (44 164 square metres) and 11 625 square metres of art studios. A total employment of 3,800 has been calculated for this site. This development is expected to generate 1,050 inbound transit trips and 105 outbound transit trips in the A.M. peak hour.

4.5 Toronto Island Airport

The Island Airport Access Alternatives Report prepared by the Metropolitan Planning Department (March, 1977) examined access alternatives to the Island Airport depending on various possible aviation and non-aviation uses of the Airport site. A range of 250-500 inbound

peak hour transit trips to the Airport was identified in the study, depending on the future intensity of use at the Airport. Since that time, STOL commuter operations have begun at the airport and it is expected that they will increase. However, at this time, it is not known to what level they will increase to. Therefore, for the purpose of this analysis, an average of 375 inbound A.M. peak hour transit trips was assumed.

4.6 Ontario Place/Exhibition Place

As noted in Section 2.0, future plans for Exhibition Place/Ontario Place are not known. Therefore, a number of possible development scenarios were presented to illustrate a range of potential transit demand. These demands were also used in the analysis of future ridership on the different alignments.

4.6.1 Existing Exhibition Place Demands plus Ontario Place Demands

Future plans for expansion of Ontario Place are unknown at this time. However, there has been some discussion of year-round operation at Ontario Place. Based upon this scenario, it is unlikely that transit demand would be greater than what is experienced today during the periods that Ontario Place is open. Therefore, for the purpose of this analysis, it has been assumed that the existing summer peak hour, peak direction ridership could be generated year-round under this scenario. 450 inbound A.M. peak hour transit trips have therefore been assumed to be generated by existing Exhibition Place and Ontario Place.

4.6.2 Exhibition Place

Future transit demand to Exhibition Place was analyzed based upon land use scenarios presented in the "Future Uses of Exhibition Place" report (Executive Task Force on Future Uses of Exhibition Place: March 1987). Two scenarios were considered:

1. Base Scenario - no added exhibit space; and

2. Scenario A - an additional 69 750 square metres of exhibit space to be opened in 1992.

A.M. peak hour transit trips for both scenarios were calculated taking into consideration the average show size, parking availability/restrictions and current TTC ridership to Exhibition Place. A low and a high figure were calculated. The low forecast is based upon the percentage increases in space utilization. The high forecast is based upon the percentage increases in space utilization and forecast increases in parking utilization.

For the Base Scenario (2001), a range of 225-500 inbound A.M. peak hour transit trips were estimated and for Scenario A (2001), a range of 350-900 inbound A.M. peak hour transit trips were calculated.

Exhibition Place has also been suggested as a possible site for a World's Fair in the year 2000. Transit demand to the World's Fair is based upon a Feasibility Study prepared by B-A Consulting Group Ltd. In total, 3700 inbound transit trips have been estimated to be generated by the World's Fair in the A.M. peak hour (18,500 outbound in the P.M. Peak Hour).

4.7 Distribution and Assignment of Forecast Total Transit Trips

Total transit trips were distributed according to the following breakdown:

1. 20% GO Transit (*)
   - for Olympics/World's Fair, approximately 50% of transit uses would arrive at Exhibition Place via GO Rail services.
2. 80% TTC
   - 25% from Bloor-Danforth Subway East (*)
   - 27% from Yonge Subway North (*)
   - 11% from Spadina Subway North (*)

- 19% from Bloor-Danforth Subway West
- 6% from local east-west routes (*3%)
- 12% from the Central Area (*)

The asterisk (*) indicates the origins which were assumed to use the HLRT. Trips were then assigned and each alignment option was analyzed in terms of service to the six development areas discussed above. Table 3 summarizes the range of peak hour transit ridership assigned to each alignment. The absolute numbers calculated, may overstate actual future demands because the analysis was conducted in isolation of a complete network review. However, these projections are useful for the purpose of determining the relative benefits of the alignment options.

In summary, the Esplanade Options (4A and 4B) could serve the greatest demand, followed in order by the Queen's Quay/Lake Shore (1A and 1B) options; the Lake Shore only options (3A,3B,3C and 3D) and the Queen's Quay only options (2A and 2B). A note of caution, however, should be made with respect to these assignments. Although the Esplanade option would appear to have the greatest potential demand, it has been assumed that for all of the other options, the transit demands from the Railway Lands would be served by other TTC services operating on the Esplanade.

Table 3

A.M. Peak Hour Transit Ridership Assigned to Alignment Alternatives

Alignment Option	A.M. Peak Hour Transit Ridership [a]	
	Base plus Expanded Exhibition Place Exhibit Space	Base plus 2000 World's Fair
1A and 1B	2500-3200	3670-3800
2A and 2B	2300-3000	3400-3600
3A,3B,3C and 3D	2400-3100	3500-3700
4A	3800-4500	4900-5100
4B	4800-5500	6000-6200

Note:

(a) These ridership estimates may overstate actual future ridership demand because the analysis was conducted in isolation of a complete network review. The numbers do however, provide the basis for comparison of alignment options.

5.0 EVALUATION OF ALIGNMENTS

The evaluation of the alignment options was based upon the following criteria:

- o service to Harbourfront, Exhibition Place and Ontario Place;
- o attractiveness of alignment from the rider's perspective (user convenience, accessibility);
- o potential for extension west of Exhibition Place/Ontario Place;
- o impacts on existing and future development;
- o compatibility with Metropolitan and City of Toronto Official Plans;
- o operational feasibility (roads and transit);
- o environmental impacts (physical, social, economic and cultural environment impacts);
- o cost (capital, operating and land); and
- o ridership demand.

The following sections briefly describe the evaluation of the alignments according to the above criteria. A detailed matrix of the evaluation is presented in Appendix C.

5.1 Transit Service (service, attractiveness of ride)

5.1.1 Alignment 1 Options (1A and 1B)

Alignment 1 options provide a continuation of the HLRT waterfront ride through Harbourfront via Queen's Quay to Bathurst Street. These options provide direct accessibility to developments on Queen's Quay and on Lake Shore Boulevard west of Bathurst Street.

5.1.2 Alignment 2 Options (2A and 2B)

Alignment 2 options provide the same transit service as alignment 1 options between Spadina Avenue and Bathurst Street. West of Bathurst Street, alignment 2 options do not provide accessibility to Lake Shore

Boulevard, but the ride to Exhibition Place and Ontario Place would be the most direct and picturesque.

5.1.3 Alignment 3 Options (3A, 3B, 3C and 3D)

Alignment 3 options do not continue the waterfront ride through Harbourfront as these options swing north to Lake Shore Boulevard at Spadina Avenue. Because the alignments are further away from developments fronting on Queen's Quay, they provide poorer transit service to those areas served by Alignment 1 and 2 options.

5.1.4 Alignment 4 Options (4A and 4B)

Alignment 4 options would provide very circuitous rides for passengers destined to Exhibition Place/Ontario Place, and while they would serve the Railway Lands developments, these alignment options are considered very poor from a waterfront transit service perspective.

5.2 Potential for Extension West of Exhibition Place/Ontario Place

All alignment options could be extended west of Exhibition Place/Ontario Place.

5.3 Physical Feasibility

All options were considered to be physically feasible.

5.4 Property and Development Impacts

The property and development impacts are summarized below for each alignment.

Alignment 1 Options

These alignments will impact the Spadina and Bathurst Quay neighbourhoods primarily because a wider right-of-way is required on Queen's Quay for both options 1A and 1B. An additional 7-11 metres is required on Queen's Quay between Spadina Avenue and Bathurst Street. They could have a significant impact on 441 Queen's Quay West and the

Spadina Gardens Park. The construction of the grade-separated facilities for option 1A would cause some temporary impacts on the Bathurst Street/Lake Shore Boulevard area during construction. If an alignment on the west side of Bathurst Street is chosen for Option 1B, there will be an impact on the gas station located on the southwest corner of Bathurst Street and Lake Shore Boulevard. Option 1B could also impact the buildings located on the south side of Lake Shore Boulevard, the north side of Coronation Park and the main access to the Dylex building, which is presently from Lake Shore Boulevard, and would have to be relocated to Stadium Road.

Alignment 2 Options

The impacts of alignment 2 options will be the same along Queen's Quay between Spadina Avenue and Bathurst Street as for alignment 1 options. In addition to these impacts, there would be a significant impact on the Bathurst Quay residential neighbourhood west of Bathurst Street, the HMCS York property and the Dylex (Tip Top Tailors) building. Option 2B would also have an impact on Coronation Park, which would be both physical and visual.

Alignment 3 Options

All alignment 3 options would require that the existing 10 metre right-of-way on the south side of Lake Shore Boulevard be utilized. However, this right-of-way extends only to Portland Street and additional right-of-way would be required west of Portland Street to Bathurst Street to accommodate the at-grade alignment options 3A and 3D. This would have an impact on the Loblaws building on the northeast corner of Bathurst Street and Lake Shore Boulevard. The MTV building on the southeast corner of the intersection would also be impacted by the required right-of-way widening. These alignment options would also impact the north side of the Kings Landing Condominium complex and the proposed Francophone Centre at the south west corner of Spadina Avenue and Lake Shore Boulevard.

The construction of the portal required for grade separation of options 3A, 3B and 3C would cause some temporary impacts in the Bathurst Street/Lake Shore Boulevard area.

Option 3A could have an impact on the buildings located on the south side of Lake Shore Boulevard, west of Bathurst Street, while option 3B would have an impact on the Molson's property on the north side of Fleet Street.

Options 4A and 4B

Option 4B would have a significant impact on existing and potential development west of Bathurst Street. The impact would be on Fort York, Loblaws, St. Mary's Cement, Molsons and the Armouries. The property impacts of option 4B are nil. The future impacts on the residential development proposed in the Spadina sub-centre of the Railway Lands along the Esplanade should also be recognized.

5.5 Compatibility with Metropolitan and City of Toronto Official Plans

All alignment options would require an amendment to the Metropolitan Official Plan to designate the line as LRT. Alignment 1 and 2 options via Queen's Quay, would require Harbourfront Plan, Spadina Quay and Bathurst Quay Sub-Area Plan amendments.

5.6 Operational Feasibility

5.6.1 Transit

Options 1A and 1B

Options 1A and 1B are good from an operational perspective because they provide direct service between the terminus of the HLRT, which is presently under construction, and either Exhibition Place or Ontario Place. Neither option 1A nor 1B pose any operational problems at the Bathurst Street/Lake Shore Boulevard intersection due to grade separation of option 1A and the alignment of option 1B along the south side of Lake Shore Boulevard. It is desirable from the TTC operational

perspective that the Bathurst/Harbourfront LRT service continue to run into the Fleet Street loop at Exhibition Place until other options can be studied.

With option 1B, it would be preferable for the Bathurst streetcar to maintain a direct southbound to westbound connection to the Harbourfront LRT at Lake Shore Boulevard. However, a detailed traffic analysis of this intersection is required to confirm the layout prior to finalization of a design for the LRT extension. This alignment option (1B) satisfies TTC operational requirements, and avoids the need for an expensive grade separation.

Option 2A - Queen's Quay/Lake Shore

Alignment option 2A is operationally desirable as it does not enter the Bathurst Street/Lake Shore Boulevard intersection. It provides a direct connection between the terminus of the HLRT and either Exhibition Place or Ontario Place. The construction of this alignment would not have an impact on the Bathurst streetcar service.

Option 2B - Queen's Quay/South Side of Coronation Park

Although this alignment option provides a scenic ride through Coronation Park and along the waterfront, it is considered to be less desirable than option 2A in terms of operational feasibility. This is because the line would have to be elevated in front of the HMCS York property and because it does not provide as direct a service to Exhibition Place as option 2A.

Option 3A - South Side of Lake Shore (grade-separated)

This alignment option is operationally feasible, but due to the complexities of the required switches and trackwork at the Spadina loop, this option is considered to be undesirable by the TTC. The interconnections expected between the Harbourfront LRT line and the proposed Spadina line also become very complicated with this option

and this reduces the flexibility for vehicular movements. In addition, the Domed Stadium and other proposed developments in this area are expected to generate increased vehicular and transit volumes which could pose serious operational problems at the Spadina Avenue/Lake Shore Boulevard intersection.

With regard to the connection with the Bathurst streetcar service, it could be connected to the Harbourfront LRT line below grade. However, the cost of such a connection is high. While there is potential for a loop at Queen's Quay, a direct connection would be difficult to achieve with the LRT located on Lake Shore Boulevard. Proceeding with this option may reduce the flexibility of the Bathurst streetcar service and its interconnection with the Harbourfront LRT in the future.

Option 3A (at-grade)

This alignment option is identical to 3A (grade separated) above, except the line would operate through the Bathurst Street/Lake Shore Boulevard intersection at grade and, therefore, provide for a connection to the Bathurst streetcar services.

Option 3B - South Side of Lake Shore/Fleet Street (grade-separated)

This option is identical to Option 3A. However, this option is more desirable operationally than 3A because it continues on Fleet Street from Bathurst Street and terminates at the Fleet Street loop.

Option 3C - Centre of Lake Shore Boulevard (grade separated)

This alignment option is considered to be operationally unfeasible because of the extremely complex trackwork required between the Spadina loop and the centre track on Lake Shore Boulevard. Increased traffic volumes are anticipated to interfere with the ultimate transit service at this intersection. In addition, the difficulties with the direct interconnection between the Bathurst streetcar line and the Harbourfront LRT limit the operational flexibility in the future.

Option 3D - Centre of Lake Shore Boulevard (at-grade)

This alignment option is also considered to be operationally infeasible due to the complex trackwork that is required at the Spadina loop. A direct connection between the Bathurst streetcar line and the Harbourfront LRT line could be made at the Bathurst Street/Lake Shore Boulevard intersection.

Options 4A and 4B

These alignment options are considered to be operationally poor due to the increased number of turns resulting from their circuitous routings. The possible interconnection of the Harbourfront line and the Spadina LRT line at the Spadina Avenue and Esplanade intersection would create a complex and undesirable operational situation. The Esplanade alignment however, should be viewed as a possible future transitway connecting directly to Union Station.

5.6.2 Roads

The analysis of operational feasibility in terms of roads has focussed on assessing the impact of the various alignment options with respect to the operation of the signalized intersections along each alignment. The traffic analysis concentrated on determining the conditions under which at-grade intersection operations would be feasible.

The difficulty common to options 1, 3 and 4B is the near-capacity condition of Lake Shore Boulevard at the signalized intersections. In other words, it is difficult to provide an LRT line with the intersection service and routing flexibility on an alignment which travels across Lake Shore Boulevard between Spadina Avenue and Strachan Avenue. Lake Shore Boulevard is the main alternative to the Gardiner Expressway for accessing the downtown core and it is essential that its capacity be retained, and even improved, if possible. Future traffic growth will place demands on the capacity of Lake Shore Boulevard that may preclude the feasibility of accommodating any special signal phasing for LRT operation at the signalized intersections along Lake

Shore Boulevard, without a significant increase in delay and congestion for Lake Shore Boulevard traffic. Consequently, alignments 1, 3 and 4B are less attractive from a traffic viewpoint than alignment 2. Furthermore, for alignment 4, the turning movements at both ends of the Esplanade (at Spadina Avenue and at Bathurst Street), require special phases which conflict with the requirements of the anticipated vehicular volumes on Spadina Avenue and Bathurst Street.

The key issue is to determine how to provide service from Queen's Quay and Spadina Avenue to Lake Shore Boulevard west of Bathurst Street. There are two choices:

1. Queen's Quay to Bathurst Street to Lake Shore Boulevard and westward; or
2. Spadina Avenue to Lakeshore Boulevard and westward to and beyond Bathurst Street.

From a traffic viewpoint, an alignment which operates along Queen's Quay and does not affect intersection performance along Lake Shore Boulevard is desirable.

A modification of alignment 1B which does not affect the operation of the Lake Shore Boulevard/Bathurst Street intersection has been proposed. This alignment would follow the centre of Queen's Quay between Spadina Avenue and Bathurst Street, turn onto the west side of Bathurst Street at the Bathurst Street/Queen's Quay intersection and then onto the south side of Lake Shore Boulevard (dedicated right-of-way except for the southwest corner of Bathurst Street and Lake Shore Boulevard). The signal operation can be accommodated within the present signal timings for the Bathurst Street/Lake Shore Boulevard intersection without a special signal phasing for the LRT operation. Under existing conditions, it does not appear feasible to

maintain both simplified signal operation and full transit vehicle routing flexibility between the Bathurst line and the Harbourfront line. Detailed study of the Bathurst Street/Lake Shore Boulevard intersection should be undertaken at the time the HLRT extension is to proceed and decisions on a final design should be based on the most up-to-date traffic and transit information.

5.7 Environmental Impacts

The results of an analysis of the environmental impacts of the different alignment options are summarized below.

Natural Environment

Impacts on the natural environment were analyzed in terms of air, soil and ground water quality. No permanent impact on the natural environment is caused by any of the alignment options. There will be some temporary impacts on air quality (e.g. dust, etc.) during the construction period.

Economic Environment

Impact on the Economic environment was evaluated in terms of effects on commerce, business and tourism. There is very little impact on the economic environment by any of the options considered. It is recognized however, that options 1 and 2 may be more beneficial and attractive to Harbourfront/Ontario Place due to the direct routing of these alignments compared to alignments 3 and 4.

Cultural Environment

Impact on the cultural environment was analyzed only in terms of the impacts on the cultural Harbourfront activities. In general, alignment options 1 and 2 link the various Harbourfront activities while option 3 may be perceived of as a "barrier" between these activities. Alignment 4 options do not link the cultural activities of Harbourfront in any way.

Social Environment

Impacts on the social environment were evaluated with regard to property, transit, roads, noise and vibration effects.

Alignment 1

Property impacts of alignment 1 options include 441 Queen's Quay West and all of the properties located along Queen's Quay. Option 1B also has an impact on the buildings located on the south side of Lake Shore Boulevard. Noise and vibration would affect these properties. The MTV building, depending on the location of the recording studios, could be impacted by noise and vibration.

Alignment 2

Both alignment 2 options will have an impact on the properties located along Queen's Quay and on the residential buildings located in Bathurst Quay. Option 2B will also have an impact on the HMCS York property and the Dylex building. These properties could experience noise and vibration effects.

Alignment 3

In general the impacts of the alignment 3 options are less than those of the other options under study. The noise and vibration impacts would primarily be on the developments on the south side of Lake Shore Boulevard, including the MTV building.

Alignment 4

Property, noise and vibration impacts would be experienced by the Molson's, Loblaws and Fort York properties as well as by the Armouries, if option 4A was the chosen alignment. The developments along the Esplanade would also experience noise and vibration due to either option 4A or 4B.

5.8 Cost

The capital cost of the at-grade alignment options (not including vehicle or land costs) varies between $27 million and $36 million (± $9 million). The alignment options that are grade separated cost an additional $25 million to $40 million depending on the alignment and configuration of the underground structure. The operating costs of alignments were considered to be approximately equal.

The major difference in total cost (capital, operating and land) is due to the cost of acquiring land parcels for right-of-way requirements. In this regard, Option 4A is by far the most expensive since the acquisition of private properties to the west of Bathurst Street would be required. Land costs of alignment Options 1, 2 and 3 are considered to be approximately equal since similar property impacts are caused and property requirements for right-of-way purposes are also similar. Land costs associated with Option 4B are minor since property acquisition is not required and minimal property impacts are created.

5.9 Ridership

Peak hour transit ridership was forecast to be highest on alignments 4A and 4B, followed in order by alignment 1 options, alignment 2 options and alignment 3 options.

The forecast ridership for alignments 4A and 4B include ridership from the Railway Lands area, which was assumed to be served by other TTC services when considering alignments 1, 2 and 3.

6.0 PREFERRED ALIGNMENT

6.1 Summary of Evaluation of Alternative Alignments

The following summarizes the evaluation of the eleven alignment options under the eight major evaluation criteria.

6.1.1 Service

Alignments via Queen's Quay between Spadina Avenue and Bathurst Street (1A, 1B, 2A, 2B) provide direct accessibility to Spadina Quay, Bathurst Quay and the Island Airport, while alignments via Lake Shore Boulevard (3A, 3B, 3C, 3D) provide less accessibility to these areas because of longer walking distances. Alignments via The Esplanade (4A, 4B) provide only partial access to Spadina and Bathurst Quays, with no access to the Airport or the Harbourfront area between Spadina Avenue and Bathurst Street.

Alignments 1 and 2 provide the most convenient rides to Exhibition Place/Ontario Place; alignments 3 and 4 are less so with alignments 4A/4B being circuitous. Alignments 1 and 2 provide a continuation of a Harbourfront ride from a recreational perspective, with alignment 2B via the water's edge being the most picturesque.

Since alignments 1, 2, 3C, 3D and 4 operate through the developed areas in the centre-median of roadways, these alignments are considered to be safer than alignments 3A and 3B which operate on the south side of Lake Shore Boulevard between Bathurst Street and Spadina Avenue.

6.1.2 Potential for Extension

All alignments can be extended west from Exhibition Place/Ontario Place.

6.1.3 Development Impacts

Alignments 1 and 2 via Queen's Quay between Spadina Avenue and

Bathurst Street impact existing developments/lands along Queen's Quay because a wider right-of-way is required for LRT operations. The alignments via Lake Shore Boulevard between Spadina Avenue and Bathurst Street impact Harbourfront development to a lesser extent because the City of Toronto Spadina Sub-Area plan protects a 10 metre transit right-of-way between Spadina and Portland Street. West of Portland Street, the Lake Shore Boulevard alignment impacts the MTV building and the Loblaws site.

West of Bathurst Street, alignments 2A and 2B severely impact the Bathurst Quay residential area, the HMCS York site and Coronation Park. Alignments 1B and 3A affect properties on the south side of Lake Shore Boulevard, while alignments 1A, 3B and 4B affect properties on the north side of Fleet Street. Alignment 4A severely impacts the Molsons area north of Fleet Street.

6.1.4 Compatibility with Official Plans

All alignments would require a Metropolitan Official Plan amendment to designate the alignments as future LRT. Alignments via Queen's Quay (1 and 2) would require amendments to the City of Toronto's Harbourfront Plan and Sub-Area plans to show a wider road right-of-way.

6.1.5 Operations

Alignments 1 and 2 are considered to be the best alignments from a transit operations perspective. Alignments via Lake Shore Boulevard (3A, 3B, 3C and 3D) have significant operational problems at the Spadina Avenue/Lake Shore Boulevard intersection. Alignments 3C and 3D, via the centre median of Lake Shore Boulevard, have even more severe operational problems than alignments 3A and 3B, which operate via the south side of Lake Shore Boulevard. Alignments 4A and 4B were also identified as having serious operational problems due to the additional turns required through intersections, resulting from the circuitous routing.

The traffic analysis conducted indicated that at-grade operations through a signalized intersection resulted in a potential loss in overall intersection capacity. At the Queen's Quay/Spadina Avenue, Spadina Avenue/Esplanade, Queen's Quay/Bathurst Street and Esplanade/Bathurst Street intersections, the loss of traffic capacity was not critical, either because of the relatively low traffic volumes or because of the specific intersection configuration. However, at the Spadina Avenue/Lake Shore Boulevard and Bathurst Street/Lake Shore Boulevard intersection, the loss of traffic capacity resulting from LRT operations was considered unacceptable to overall traffic operations. At the Bathurst Street/Lake Shore Boulevard intersection, analyses indicated that only alignments operating via the south side of Lake Shore Boulevard (1B and 3A) could be accommodated at an acceptable level of traffic service without grade separating the LRT and traffic movements.

As a result, alignments 2A and 2B were considered best from a road and transit operations perspective, followed by alignments 1B and 3A.

6.1.6 Environmental Impacts

There are marginal differences between the alignments based upon impacts of the physical environment, except for the impacts of alignments 2A and 2B on the Bathurst Quay residential area and Coronation Park.

Alignment 3 options are considered best from a social environmental perspective because these would have less of an impact on existing and proposed development.

Alignments 1 and 2 beneficially impact the cultural/recreational environments to a greater degree than alignments 3 and 4 because they link Harbourfront/Exhibition Place/Ontario Place activities better and because alignments 1 and 2 extend the "waterfront" transit rides.

6.1.7 Cost

The capital cost of the alignments, from $27 million to $36 million, are very similar when considering at grade operations only (± $9 M difference). If, due to traffic operational problems, an alignment has to be grade separated at the Bathurst Street/Lake Shore Boulevard intersection, the cost of that alignment rises by $25-$40 million depending on the alignment and configuration.

Transit operations costs for the eleven alignments were considered to be approximately equivalent.

Land costs for alignment 4A were estimated to be very high compared to the other alignments. Land costs for alignments 1, 2 and 3 were considered to be approximately equal, while land costs for alignment 4B were estimated to be the lowest of all alignments.

6.1.8 Ridership

The variation in estimated ridership demands was based on the degree of accessibility to existing and proposed developments. Alignments 4A and 4B had the highest ridership on the proposed extension, due to serving the Esplanade residential area of the Railway Lands; ridership estimates for the other alignments did not include this area, as it was assumed to be served by other TTC services that could operate along the Esplanade.

Alignments 1 and 2 had higher ridership estimates than alignment 3 because they are located closer to the major development areas.

6.2 Selection of Preferred Alignment

Based upon the evaluation of the eleven alignments, the following was concluded with respect to the benefits/disbenefits of the alignments:

- alignment 4A should not be considered further because of

potentially high land costs and poor transit services, however, options for a possible transit alignment should be considered if this area comprehensively redevelops;

- o alignment 4B should not be considered further because of poor transit service and operational problems associated with the additional turns resulting from the circuitous routing;

- o due to the high cost of the grade separation of the Bathurst Street/Lake Shore Boulevard intersection, only options capable of being accommodated at grade through the Bathurst Street/Lake Shore Boulevard intersection should be pursued (alignments 1B, 3A (at grade), and 3D);

- o alignments 2A and 2B, although operationally superior to all other alignments, should not be considered further because of impacts to the Bathurst Quay residential area, which are considered to be unacceptable. In addition, option 2B should also not be considered further because of environmental impacts on Coronation Park and HMCS York; and

- o alignments 3C and 3D (centre median of Lake Shore Boulevard) should not be considered further because of potentially serious operational problems at Spadina/Lake Shore Boulevard.

The results of the evaluation of alignments indicated that two alignments 1B and 3A (at-grade) had sufficient merit to be carried forward as potential alignments for an extension of the HLRT. West of Bathurst Street, the two alignments both follow the south side of Lake Shore Boulevard to Exhibition Place/Ontario Place with a sub-option of crossing to Fleet Street and, therefore, any differences between the alignments are between Spadina Avenue and Bathurst Street.

A detailed comparison of the two alignments between Spadina Avenue and Bathurst Street was conducted and the results are presented on Table #4. This comparison clearly indicates the relative benefits of each alignment. Alignment 1B provides significantly more benefit in terms of service, accessibility and road and transit operations than alignment 3A. Alignment 3A has a lesser impact on existing and proposed development.

The trade-off between the two alignments can be focussed on the superior overall transportation benefits of alignment 1B versus the marginally lesser impact on developments of alignment 3A. When compared, the benefits of alignment 1B outweigh those of alignment 3A. Therefore, alignment 1B is the preferred alignment for an extension of the HLRT.

6.3 Preferred Alignment

Alignment 1B (illustrated on TTC Drawing No. 0121-6-112) would extend the HLRT from Spadina Avenue and Queen's Quay westerly via Queen's Quay to Bathurst Street, north on Bathurst Street to Lake Shore Boulevard, then westerly along the south side of Lake Shore Boulevard to Exhibition Place/Ontario Place.

In order to accommodate a westerly extension of the HLRT along this alignment, Queen's Quay will have to be widened from its current 20 metre right-of-way to 27 metres. At future LRT station locations (Spadina Avenue, Portland Street) the road right-of-way would have to be widened up to 31 metres to accommodate platforms and left turn lanes, if required. A potential realignment of Queen's Quay has been proposed as part of the Harbourfront 2000 Plan. The preferred alignment can operate via the proposed realigned roadway. However, the recommended LRT alignment would require the realigned portion to be widened to a 27 metre right-of-way to be consistent with other sections of a widened Queen's Quay.

The LRT would operate via Bathurst Street from Queen's Quay to Lake Shore Boulevard, then turn west at the Bathurst Street/Lake Shore Boulevard intersection and operate via the south side of Lake Shore Boulevard, with a sub-option crossing Lake Shore Boulevard to Fleet Street. The selection of this alignment does not preclude the option of joining Fleet Street at Bathurst Street if future conditions warrant and if future traffic conditions would permit the connection. The engineering details of this section are to be studied in greater detail at the time a decision to extend the LRT is made. Possible routings include a centre-median LRT on Bathurst Street, or shifting the LRT to the west side of Bathurst Street to minimize disruption to the Bathurst Street/Lake Shore Boulevard intersection. Sufficient road right-of-way exists on both Bathurst Street and Lake Shore Boulevard to accommodate the LRT extension, therefore no road right-of-way widenings are required west of the Bathurst/Queen's Quay intersection.

West of the Tip Top Tailor's building, the LRT would operate in a private right-of-way on the south side of the road, either to Ontario Place or across Lake Shore Boulevard to the existing Exhibition Place loop. A final determination of the terminus of the LRT and the alignment west of Bathurst Street should await the resolution of the future land uses at Exhibition Place/Ontario Place.

The TTC has identified that they would like to protect the option for inter-connecting the Bathurst streetcar service with a future HLRT extension. The details of this connection should be studied at the same time as the engineering design of the Bathurst Street/Lake Shore Boulevard intersection. The TTC has also identified that land for a turn back loop in the Bathurst Street/Queen's Quay area should be protected in order to permit future short-turning of streetcars.

6.4 City of Toronto Planning and Development Department Minority Position

The City of Toronto Planning and Development Department does not concur with the final conclusions of the Working Committee. It is the opinion of the Planning and Development Department that the impacts of alignment 1B on development along Queen's Quay warrant the protection of an alignment via Lake Shore Boulevard rather than via Queen's Quay. The Department does acknowledge, however, that if satisfactory resolutions to the impacts on 441 Queen's Quay and the impacts on the Spadina Gardens Park (to the satisfaction of the City of Toronto Commissioner of Parks and Recreation) were achieved, the Department may support the Queen's Quay alignment. The Department's position is presented in Appendix D.

6.5 Future Action

The following activities should be undertaken to protect for a westerly extension of the HLRT:

(i) Metropolitan Toronto should initiate an amendment to the Metropolitan Official Plan illustrating a future Harbourfront LRT extension from Spadina Avenue to the Bathurst Street/Lake Shore Boulevard intersection via Alignment 1B;

(ii) City of Toronto should initiate the appropriate Harbourfront Plan, Spadina Quay and Bathurst Quay Sub-Area Plan amendments to designate the Queen's Quay road right-of-way width as 27 metres (on the understanding that up to 31 metres at station locations would be required) to accommodate an LRT extension; and

(iii) City of Toronto should amend the development review drawings for 441 Queen's Quay so that they will be in conformity with the amended Spadina Sub Area Plan.

The following activities should also be undertaken prior to finalization of a design for the LRT extension:

(i) detailed analysis of the Bathurst Street/Lake Shore Boulevard intersection based upon the most up-to-date road and transit volume and network information; and

(ii) detailed analysis of a terminus for the LRT based upon the most up-to-date land use at Exhibition Place/Ontario Place.

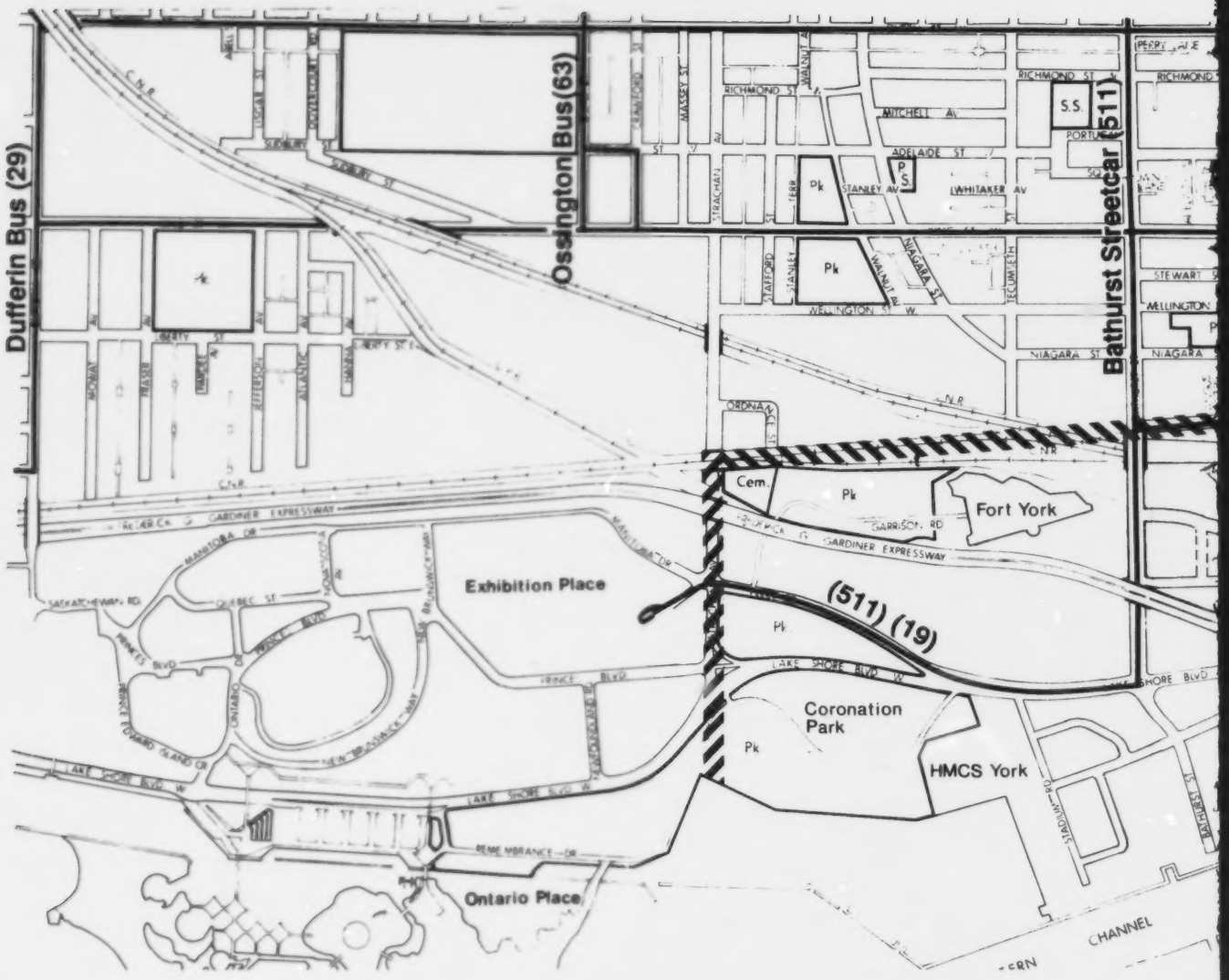
The following actions should be undertaken with respect to future transit services along the Esplanade west of Spadina Avenue:

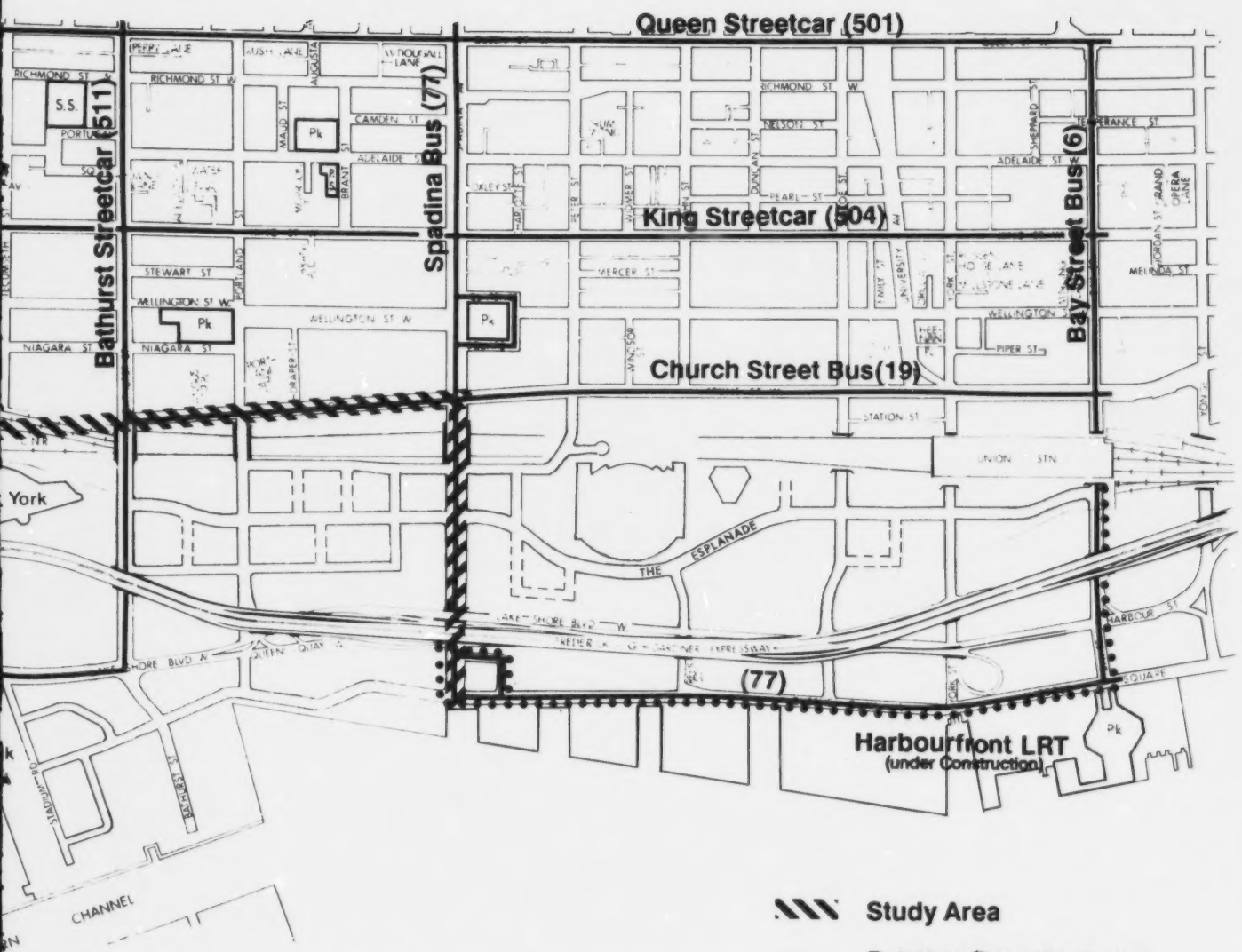
(i) the City of Toronto should protect for possible future LRT platform locations on the Esplanade at Spadina Avenue, Portland Street and Bathurst Street; and

(ii) if the area west of Bathurst Street, north of Fleet Street should comprehensively redevelop, the City of Toronto and Metropolitan Toronto should ensure the protection of a transit alignment from Bathurst Street to Strachan Avenue. The current IPCF Inc. proposal, which is partially located west of Bathurst Street north of the Gardiner Expressway, should not preclude a possible future transit alignment west of Bathurst Street.

Table 4
Comparison of Alignments 1B and 3A (At-Grade)
Between Spadina Avenue and Bathurst Street

Criteria		Higher Ranking Alignment	Comment
(i)	serves Harbourfront, Ontario Place/Exhibition Place	1B (significant)	provides more direct access to Harbourfront/Airport area
(ii)	attractiveness of ride	1B (significant)	continuation of existing Harbourfront LRT via waterfront
(iii)	potential for extension west of Exhibition Place/Ontario Place	--	both alignments can be extended west of Exhibition Place/ Ontario Place
(iv)	development impacts	3A (marginal)	less impact of existing Harbourfront parcels 1B - 441 Queen's Quay, Ramparts, MTV Building, 3A - Francophone Centre, MTV building, Loblaws
(v)	compatibility with Metro/ City Official Plans	3A	may not require sub-area plan amendments
(vi)	Operational Feasibility - transit	1B (significant)	operational concerns at Spadina/Lake Shore Boulevard with respect to LRT turns and LRT connection to the north
	- roads	1B (significant)	does not traverse Spadina Lake Shore Boulevard intersection, therefore, no impact on through traffic at that intersection
(vii)	Environmental Impacts - social environment	3A	less impact to existing and proposed residential development
	- cultural environment	1B	links Harbourfront recreational activities better than 3A
(viii)	Costs - capital - operating - land	-- -- --	the costs (capital, operating and land) of the alignments are approximately equal
(ix)	Ridership	1B	provides more direct access to developments therefore higher ridership expected.


Dufferin Bus (29)
Ossington Bus(63)
Bathurst Streetcar (511)
Exhibition Place
Fort York
(511) (19)
Coronation Park
HMCS York
Ontario Place
Cem
Pk
S.S.
P.S.
RICHMOND ST
ADELAIDE ST
STANLEY AV
WHITAKER AV
MITCHELL AV
NIAGARA ST
MELLINGTON ST W
STEWART ST
ORDNANCE ST
GARRISON RD
GARDINER EXPRESSWAY
LAKE SHORE BLVD W
QUEBEC ST
PRINCES BLVD
PRINCE EDWARD ISLAND CR
MANITOBA DR
SASKATCHEWAN RD
ONTARIO DR
NEW BRUNSWICK WAY
BRUNSWICK AV
BRUCE BLVD
RENE MORANCE DR
STADIUM RD
CHANNEL



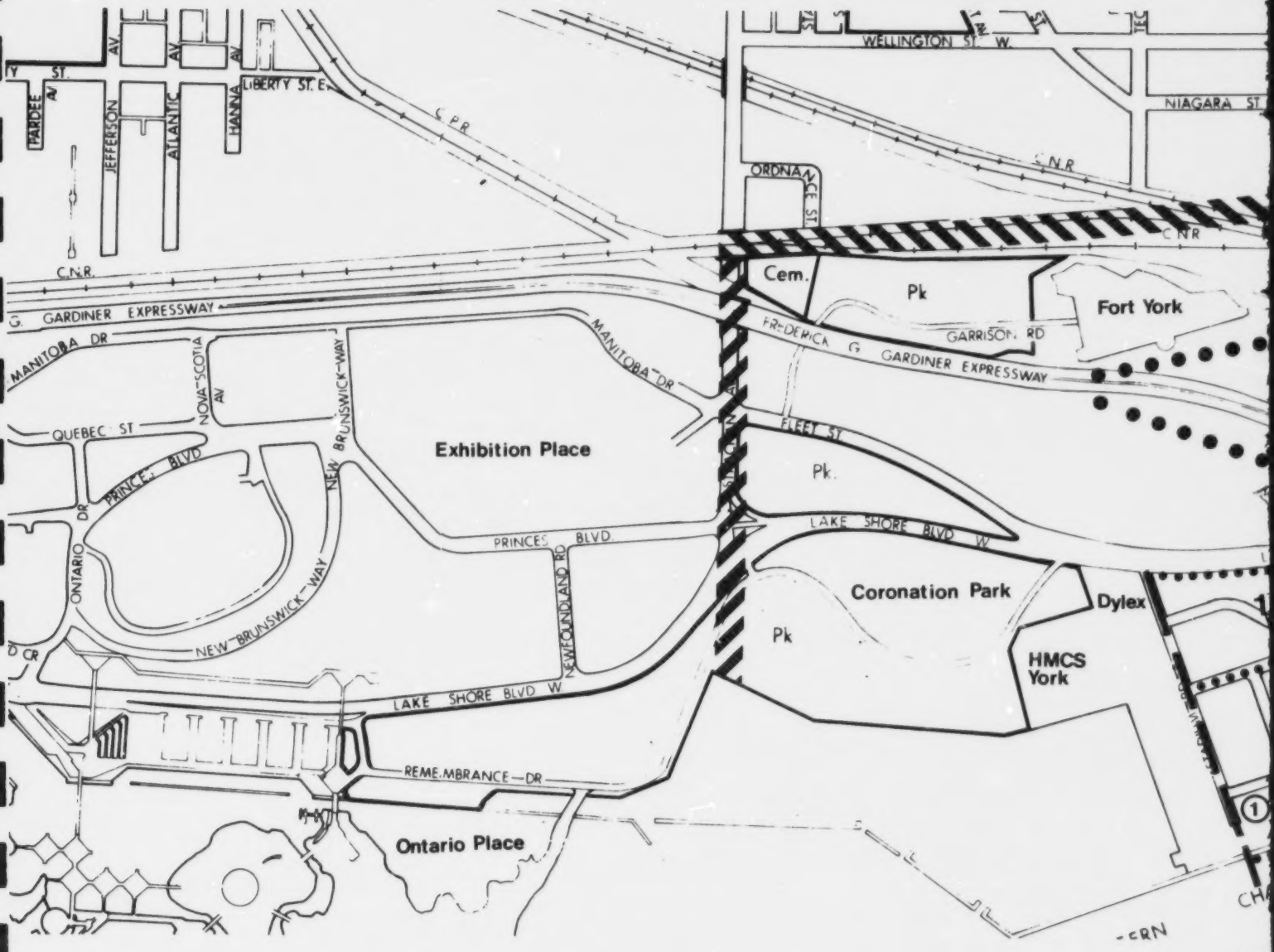
Study Area

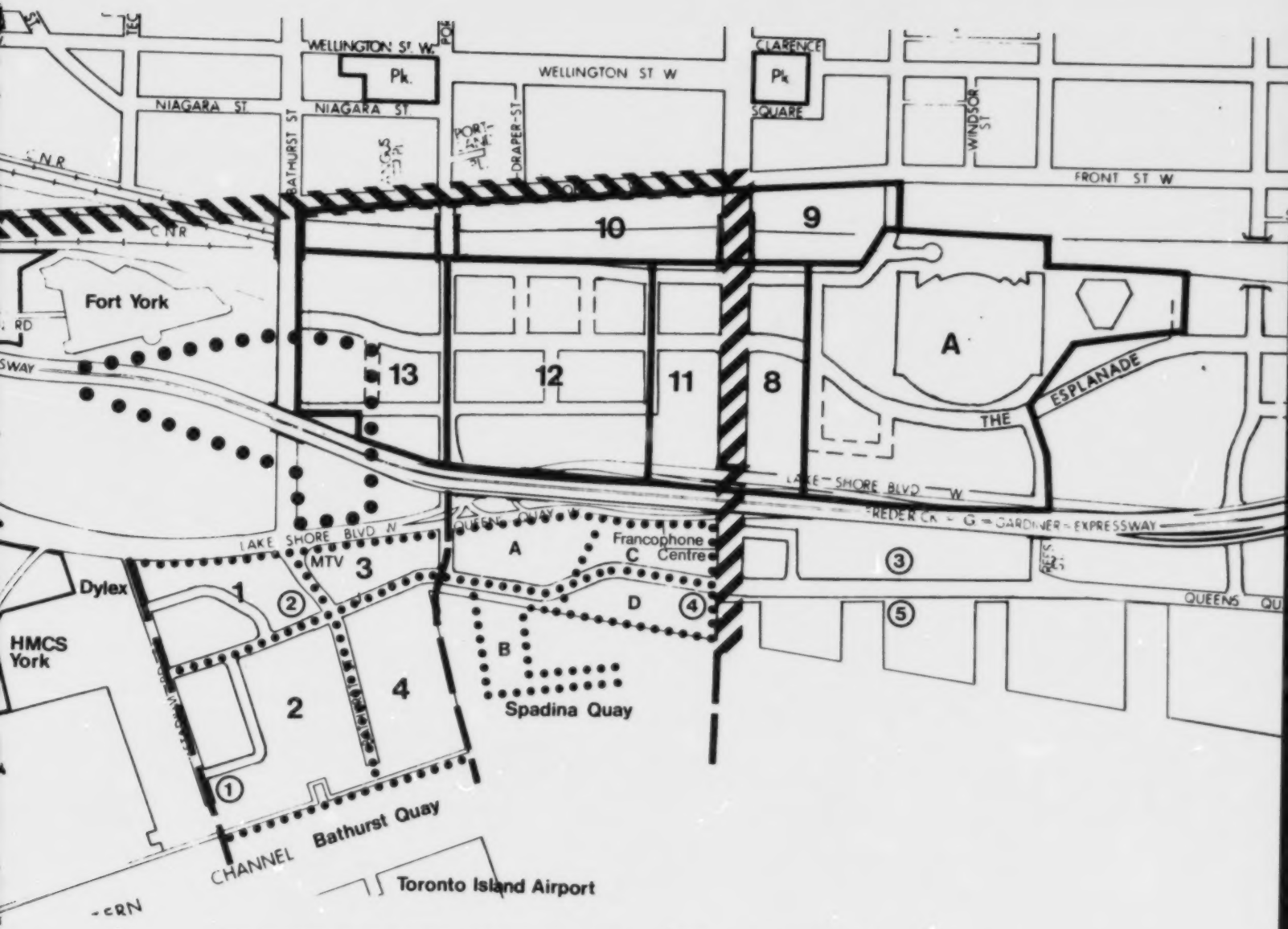
Existing Transit service

Harbourfront LRT under construction

( ) Route Number

FIGURE 1:
STUDY AREA AND EXISTING TRANSIT SERVICE


WELLINGTON ST. W.
NIAGARA ST.
LIBERTY ST. E.
HARDEE AV
JEFFERSON AV
ATLANTIC AV
HANNA AV
C.P.R.
C.N.R.
ORDNANCE ST.
Cem.
Pk
Fort York
GARRISON RD
FREDERICK G. GARDINER EXPRESSWAY
G. GARDINER EXPRESSWAY
MANITOBA DR
NOVA SCOTIA AV
NEW BRUNSWICK WAY
QUEBEC ST
PRINCES' BLVD
ONTARIO DR
Exhibition Place
FLEET ST
Pk.
LAKE SHORE BLVD W.
NEWFOUNDLAND RD
Coronation Park
Dylex
HMCS York
REMEMBRANCE DR
Ontario Place



DEVELOPMENTS CAUGHT IN CITY OF TORONTO FREEZE

1. 11 STADIUM ROAD
2. 650 QUEEN'S QUAY WEST
3. 350 QUEEN'S QUAY WEST
4. 441 QUEEN'S QUAY WEST
5. 385 QUEEN'S QUAY WEST

STUDY AREA

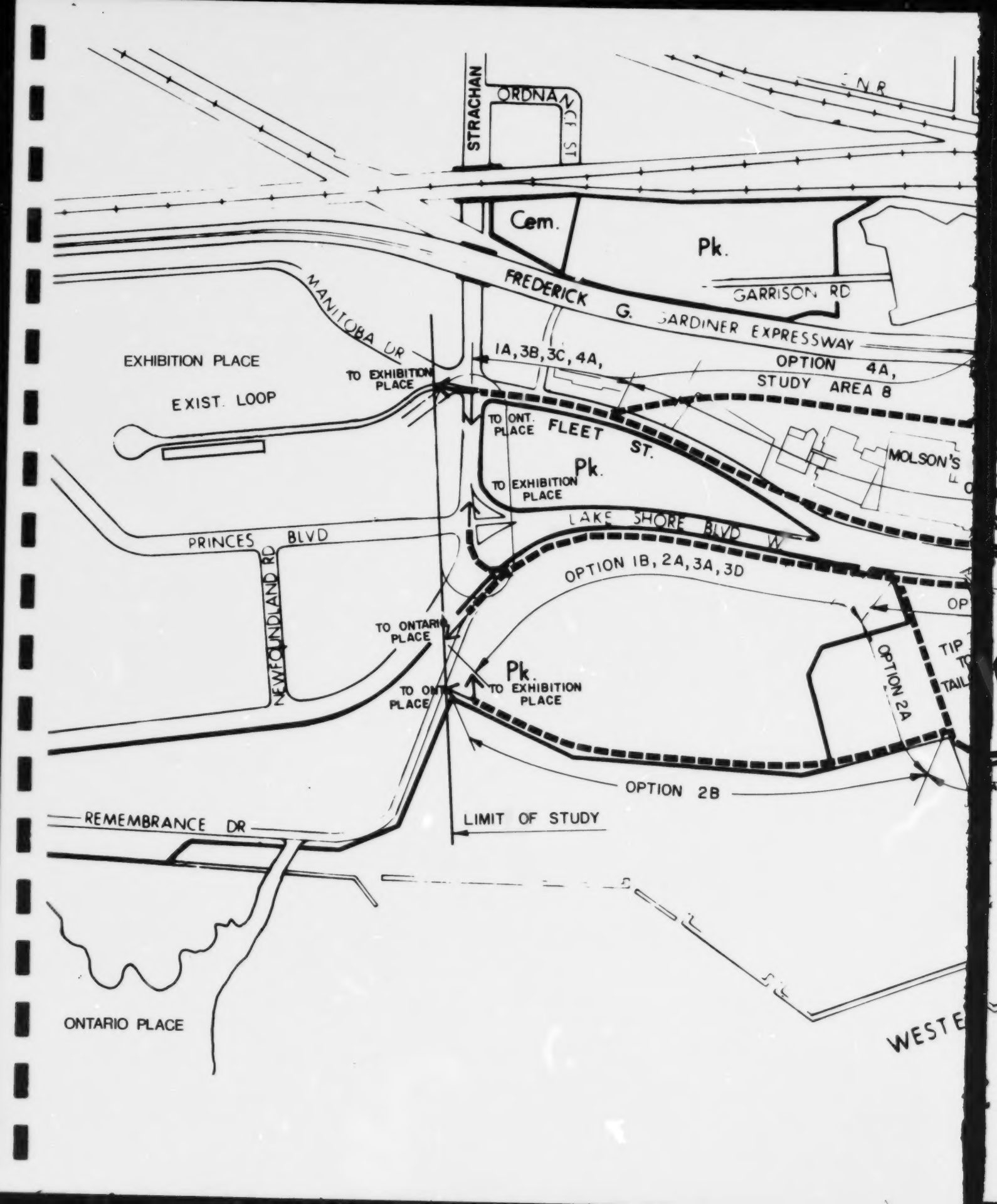
RAILWAY LANDS - PRECINCTS

HARBOURFRONT - SPADINA AND BATHURST QUAYS

SPADINA AND BATHURST QUAY BLOCKS

LOBLAWS PROPOSAL

FIGURE 2
RAILWAY LANDS AND HARBOURFRONT DEVELOPMENT


STRACHAN
ORDNANCE ST
C.N.R.
Cem.
Pk.
GARRISON RD
FREDERICK G. GARDINER EXPRESSWAY
MANITOBA DR
EXHIBITION PLACE
TO EXHIBITION PLACE
EXIST. LOOP
1A, 3B, 3C, 4A,
OPTION 4A,
STUDY AREA 8
TO ONT. PLACE
FLEET ST.
Pk.
TO EXHIBITION PLACE
MOLSON'S
PRINCES BLVD
NEWFOUNDLAND RD
LAKE SHORE BLVD W.
OPTION 1B, 2A, 3A, 3D
TO ONTARIO PLACE
Pk.
TO EXHIBITION PLACE
TO ONT. PLACE
OPTION 2A
OPTION 2B
REMEMBRANCE DR
LIMIT OF STUDY
ONTARIO PLACE

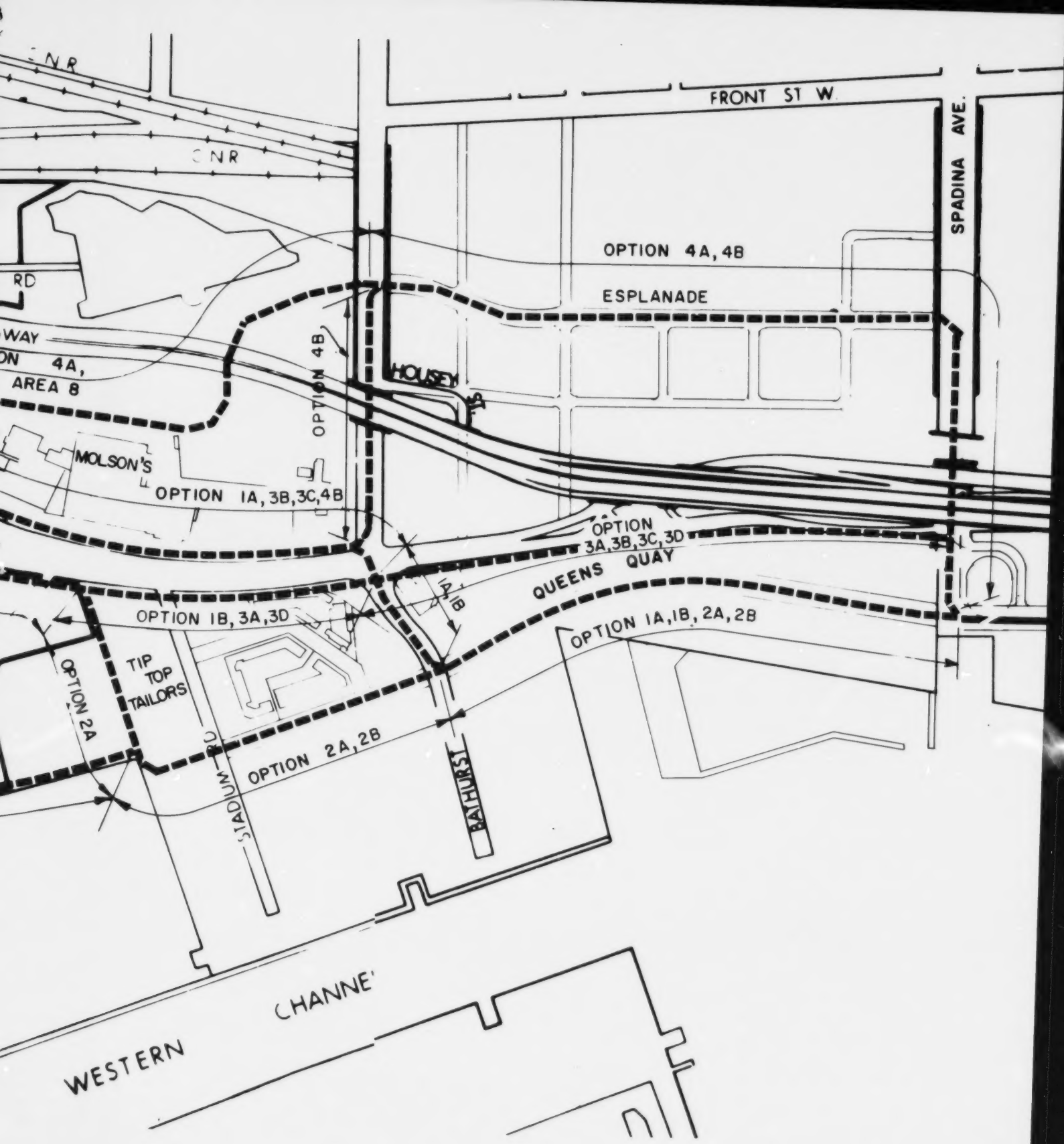
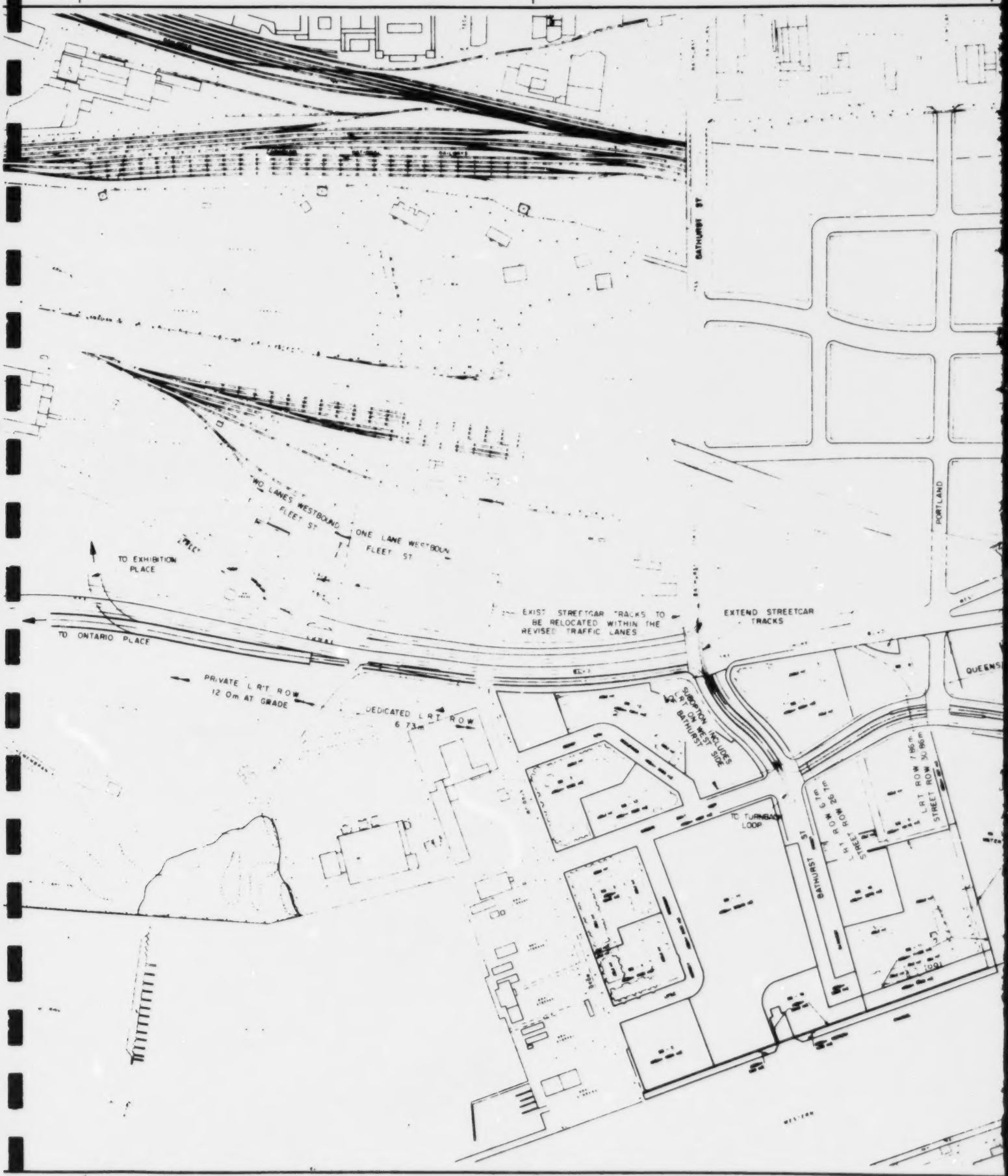
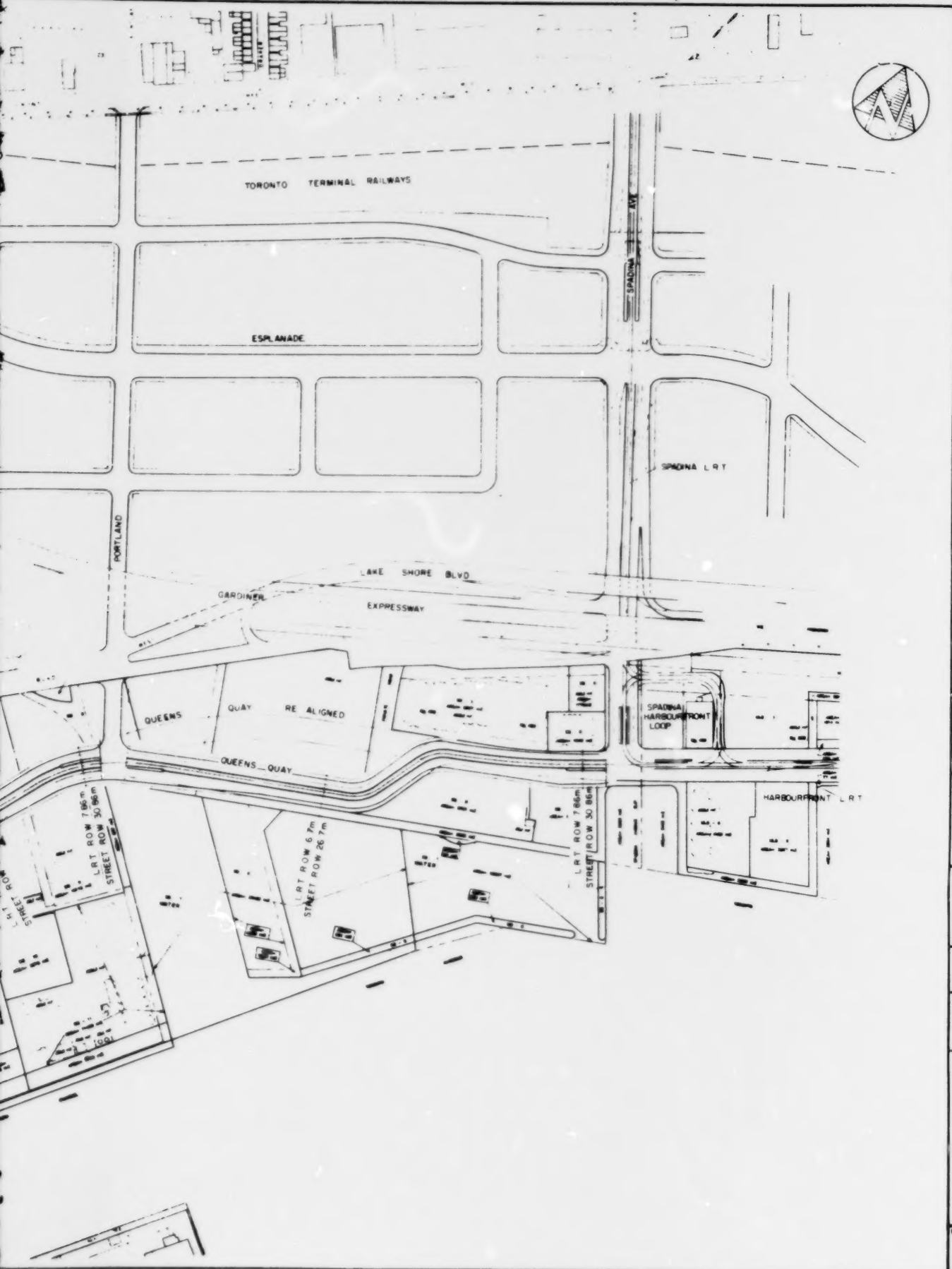


FIGURE 3: ALTERNATIVE ALIGNMENT OPTIONS


BATHURST ST
PORTLAND
TWO LANES WESTBOUND FLEET ST
ONE LANE WESTBOUN FLEET ST
TO EXHIBITION PLACE
TO ONTARIO PLACE
EXIST STREETCAR TRACKS TO BE RELOCATED WITHIN THE REVISED TRAFFIC LANES
EXTEND STREETCAR TRACKS
PRIVATE L R T R O W 12 0m AT GRADE
DEDICATED L R T R O W 6 73m
SUBSTATION INCLUDES L R T ON WEST SIDE BATHURST
TO TURNBACK LOOP
BATHURST ST
L R T R O W 6 1m STREET R O W 26 1m
L R T R O W 7 86m STREET R O W 30 86m
QUEENS



REVISIONS

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REFERENCE DRAWINGS

APPROVED

TORONTO TRANSIT COMMISSION

MANAGER, ENGINEERING

GENERAL MANAGER

UNLESS SIGNED ABOVE THIS DRAWING MUST BE CONSIDERED PRELIMINARY

DRAWN K. FURST VLE DI

CHECKED

CORRECT

SCALE 1:4000

TORONTO TRANSIT COMMISSION

ENGINEERING DEPARTME

EXHIBITION / ONTARIO PL

HARBOURFRONT L.R.T. WESTERN EXTENSION

SPADINA TO STRACHA

ALIGNMENT OPTION IB

PLAN

DWG. NO.

0121-G-112

Harbourfront LRT Extension Study

Appendices

A. HLRT Extension Travel Demand Analysis

B. Detailed Descriptions of Alternative Alignment Options

C. Evaluation of Alignment Options

D. City of Toronto Planning and Development Department's Position with respect to the Preferred Alignment

APPENDIX A

HLRT EXTENSION TRAVEL DEMAND ANALYSIS

APPENDIX A
HLRT Extension Demand Analysis

1.0 INTRODUCTION

The demand analysis for the HLRT extension were divided into two categories, (i) potential demand to Exhibition Place/Ontario Place, and (ii) future projected demands resulting from existing and approved development in the Railway Lands and Harbourfront.

2.0 POTENTIAL DEMAND TO EXHIBITION PLACE/ONTARIO PLACE

At this time there are no firm proposals for modifications to Exhibition Place/Ontario Place, except for the relocation of major sporting events from Exhibition Stadium to the Skydome. Therefore, future travel demand to Exhibition Place/Ontario Place will be examined based upon the following five possible future scenarios:

(i) existing demand - without Stadium events;
(ii) future demand with possible increases in Exhibition Place exhibit space for trade shows;
(iii) future demand with possible year round operation of Ontario Place;
(iv) future demand with possible Olympic Games (1996); and
(v) future demand with a possible World's Fair (2000).

These scenarios represent a wide range of possible land use configurations with resultant low to high transit demands.

(i) <u>Existing</u>

Non-summer TTC ridership to Exhibition Place in 1987 was approximately 1,800 trips per day, 2/3 via the Dufferin Bus and 1/3 via the Bathurst streetcar. Peak hour peak direction ridership for these routes is approximately 7.5% of total daily ridership. Therefore, existing peak hour peak direction non-summer ridership to Exhibition Place is approximately:

Via Dufferin bus 100
Via Bathurst streetcar 50

Ridership on these routes increases significantly in the summer months due to the increased activity at Exhibition Place/Ontario Place. Peak hour summer ridership on the Bathurst streetcar (non-special events) increases in the order of 100%, while on the Dufferin bus it increases approximately 85%. Therefore, existing peak hour peak direction summer ridership (non special event) to Exhibition Place is approximately:

Via Dufferin bus 200
Via Bathurst streetcar 100

In addition to these regular TTC services, a new special service to Ontario Place began operation in 1988. The route operates between the downtown area and Ontario Place and is subsidized by Ontario Place. The TTC estimates that regular total weekday ridership could range from 370 - 660 passengers. The peak hour peak direction ridership would be approximately 50-100 passengers.

(ii) Future demand with possible increases in exhibit space for trade shows:

The Future Uses of Exhibition Place - March, 1987 Report of the Executive Task Force on Future Uses of Exhibition Place, examined the impact on Exhibition Place operations and revenues of increasing exhibit space for trade shows. Under scenarios presented in the report an additional 69 750 square metres (750,000 sq.ft.) of exhibit space (for a total of 1,712,000 sq.ft.), could be made available by 1992.

Future transit demand to the Exhibition Place for this scenario

was calculated based upon 1987 non-summer TTC ridership information to Exhibition Place, increased to reflect the additional activity at Exhibition Place. The following peak hour peak direction transit demands were calculated:

BASE - No Additional Exhibit Space

		LOW	HIGH
1991	To/From the East	75	165
	To/From the North	100	100
2001	To/From the East	125	400
	To/From the North	100	100

SCENARIO A - Additional Exhibit Space

1991	To/From the East	25	300
	To/From the North	100	100
2000	To/From the East	250	800
	To/From the North	100	100

(iii) Future demand with a possible year round operation of Ontario Place:

Future plans for expansion of Ontario Place are unknown at this time, however, there has been some discussion of operating Ontario Place year round. Based upon this scenario, it is likely that transit demand would not be greater than what is experienced today during the periods that Ontario Place is open. Therefore, for this study, it has been assumed that the existing summer peak hour peak direction ridership would be generated year round under this scenario (50-100 passengers).

(iv) Future demand with a possible Olympic Games (1996)

The Toronto/Ontario Olympic Council commissioned a study in 1986, conducted by CMP/Barnard on the feasibility of Toronto hosting the 1996 Olympic Games. Exhibition Place is identified in the study as a possible site for the following events:

- Athletics (100,000 seat stadium - temporary);
- Football;
- Handball;
- Table Tennis;
- Special Olympics - Athletics; and
- Olympics for the Disabled - Athletics.

The study also indicates a possible Olympic Media Village (8,500 beds) in the vicinity of the Bathurst Quay area.

Although transportation requirements of the Olympics were not examined in depth, the report does provide a cursory overview of the transportation needs of an Olympic Games. The report identifies that the most intensive transit demand would be between the athletes' Olympic Village (York University), the Olympic Stadium (Exhibition Place) and the new Domed Stadium. The report concludes that these movements can be accommodated via:

- GO Trains between Union Station and Exhibition Place;
- Bus shuttle services to subway stations from regional parking facilities;
- peak streetcar capacity to Exhibition Place; and
- peak service on other regular transit routes.

The report does not identify if peak streetcar capacity to the Exhibition Place refers to existing streetcar routes and/or to an

extended HLRT. However, the consultants who prepared the report indicated that an HLRT extension could be provided, and that it was a possible improvement that would serve the Olympics.

(v) Future Demand with a possible World's Fair (2000):

The Provincial Government has investigated the possibility of Metropolitan Toronto hosting a World's Fair at the turn of the next century. Part of this investigation looked at different sites in and about Metropolitan Toronto, including Exhibition Place/Ontario Place. The following peak hour transit demands to/from a Exhibition Place/Ontario Place site were forecast for the World's Fair:

		Inbound	Outbound
A.M. Peak Hour	West	1,300	0
	North*	1,660	0
	East	745	0
A.M. Site Peak Hour	West	18,980	865
	North*	24,405	1,115
	East	10,845	495
P.M. Peak Hour	West	3,855	6,475
	North*	4,990	8,320
	East	2,205	3,700
P.M. Site Peak Hour	West	865	18,980
	North*	1,115	24,405
	East	495	10,845

* 91% of the ridership from the north is to Union Station, then via GO shuttle to the Exhibition Place, remainder via TTC surface routes.

The report concluded that the majority of the trips to the World's Fair would be via regular GO Train services stopping at the Exhibition and a special GO Shuttle train from Union Station. The remaining trips would be via TTC surface routes, including an extended HLRT. The report forecast the following surface transit ridership to Exhibition Place westbound from Bathurst Street:

	Inbound	Outbound
A.M. Peak Hour	340	0
A.M. Site Peak Hour	4,880	225
P.M. Peak Hour	1,000	1,665
P.M. Site Peak Hour	225	4,880

3.0 Ridership Projections for Alignment Options

Table A.1 through A.6 present the transit demand analysis of the alignment options.

TABLE 7-1

DEMAND ANALYSIS : RAILWAY LANDS (MAXIMUM DEVELOPMENT PERMITTED BY PART II PLAN)
(AM PEAK HOUR)

DEVELOPMENT	OFFICE SPACE (SQ. M)	EMPLOYEES (28 SQ.M./PERS)	OTHER NON-RESIDENTIAL SPACE (SQ.M)	EMPLOYEES (45 SQ.M./PERS)	NON-RESIDENTIAL PEAK HOUR TRIPS (.85 ATT./VAC.) (.55 PK.HR.FACT)	NON-RESIDENTIAL PEAK HOUR TRANSIT TRIPS 55% MODAL SPLIT INBD.	NON-RESIDENTIAL PEAK HOUR TRANSIT TRIPS 55% MODAL SPLIT OUTBD.	RESIDENTIAL UNITS	POPULATION (2 PERS./UNIT)	RESIDENTIAL PEAK HOUR TRIPS (.85 ATT./VAC.) (.55 PK.HR.FACT)	RESIDENTIAL PEAK HOUR TRANSIT TRIPS 45% MODAL SPLIT INBD.	RESIDENTIAL PEAK HOUR TRANSIT TRIPS 45% MODAL SPLIT OUTBD.	TOTAL PEAK HOUR TRANSIT TRIPS INBD.	TOTAL PEAK HOUR TRANSIT TRIPS OUTBD.
RAILWAY LANDS														
Precinct A	164305	5868	10810	240	2855	1570	157	251	502	235	27	106	1597	263
8	81217	2900	7046	156	1429	786	78	937	1874	876	98	394	884	472
9	89381	3192	4002	89	1534	844	84	0	0	0	0	0	844	84
10	59578	2128	35747	794	1366	751	75	0	0	0	0	0	751	75
11	32452	1159	6303	140	607	334	33	1236	2472	1156	130	520	464	553
12/13	0	0	18770	417	195	107	11	2597	5194	2428	273	1092	380	1103
TOTAL (see (1))	426933	15247	82678	1836	7986	4392	438	5021	10042	4695	528	2112	4920	2550

NOTES:
ASSUMPTIONS USED: Office Space per Worker: 28 sq.m.
Attendance/Vacancy Rate: 85%
Peak Hour Factor: 55%
Modal Split: 55% for office and other non-residential uses (reverse/outbound flow estimated at 10% of inbound trips)
45% for residential uses (reverse/inbound flow is estimated at 25% of outbound trips)

(1) SOURCE: TRANSPORTATION ANALYSIS FOR PRECINCTS 8, 9, 10 AND 11 OF CITYPLACE (IBI GROUP, FEB 1988)

TABLE A-2

DEMAND ANALYSIS : HARBOURFRONT (SPADINA AND BATHURST QUAYS), REMAINING DEVELOPMENT POTENTIAL AT HARBOURFRONT, 250 STADIUM ROAD, AND LOBLAWS PROPOSAL

DEVELOPMENT	EXISTING NON-RESIDENTIAL (SQ.M.)	PROPOSED NON-RESIDENTIAL (SQ.M.)	TOTAL EMPLOYMENT (28 sq.m/person office) (45 sq.m/person other non-res.)	NON-RESIDENTIAL PEAK HOUR TRIPS (.85 ATT./VAC.) (.55 PK.HR.FACT)	NON-RESIDENTIAL PEAK HOUR TRANSIT TRIPS (55%) INBD.	OUTBD.	EXISTING RESIDENTIAL (UNITS)	PROPOSED RESIDENTIAL (UNITS)	TOTAL RESIDENTIAL POPULATION (2 PERS./UNIT)	RESIDENTIAL PEAK HOUR TRIPS (.85 ATT./VAC.) (.55 PK.HR.FACT)	RESIDENTIAL PEAK HOUR TRANSIT TRIPS (45%) INBD.	OUTBD.	TOTAL PEAK HOUR TRANSIT TRIPS INBD.	OUTBD.
HARBOURFRONT														
Spadina Quay														
Block A	9256	0	331	155	85	8	102	0	204	95	10	43	95	51
B	45	0	1	0	0	0	0	0	0	0	0	0	0	0
C	5960	0	213	99	54	5	0	0	0	0	0	0	54	5
D	0	1184	26	12	7	1	0	120	240	112	13	50	20	51
Total	15261	1184	571	266	146	14	102	120	444	207	23	93	169	107
Bathurst Quay														
Block 1	320	0	7	3	2	0	325	232	1114	521	59	234	61	234
2	169	0	4	2	0	0	323	289	1224	572	64	257	64	257
3	8428	0	301	141	66	7	0	0	0	0	0	0	66	7
4	14427	0	321	150	70	7	0	0	0	0	0	0	70	7
Total (see (1))	23344	0	633	296	138	14	648	521	2338	1093	123	491	261	505
Harbourfront (remaining dev. potential)	0	7000	155	73	40	4	0	620	1240	580	65	261	105	265
Total (see (1))	0	7000	155	73	40	4	0	620	1240	580	65	261	105	265
250 Stadium Road	0	1350	30	14	8	1	0	730	1460	683	78	307	86	308
Total (see (1))	0	1350	30	14	8	1	0	730	1460	683	78	307	86	308
Loblaws Proposal	0	131579	3827	1894	1042	104	0	0	0	0	0	0	1042	104
Total (see (2))	0	131579	3827	1894	1042	104	0	0	0	0	0	0	1042	104
TOTAL	38605	141113	5216	2543	1374	137	750	1991	5482	2563	289	1152	1663	1289

NOTES: * ANALYSIS INCLUDES DEVELOPMENTS CAUGHT IN THE FREEZE:
1. 11 STADIUM ROAD (HARBOURS I - 289 RES. UNITS)
2. 650 QUEEN'S QUAY WEST (HARBOURS II - 232 RES. UNITS)
3. 441 QUEEN'S QUAY WEST (120 RES. UNITS & 1184 SQ.M. NON-RES.)
* THERE IS NO PROPOSAL FOR THE NOLSON'S PARCEL
* REMAINING DEVELOPMENT POTENTIAL AT HARBOURFRONT:
- HARBOURFRONT 2000 PLAN (1987) - REMAINING POTENTIAL IS 62000 SQ.M. OF WHICH 9000 SQ.M. IS NON-RES. USES AND REST, OR 640 UNITS ARE RESIDENTIAL UNITS
- CITY CONCEPT DEVELOPMENT PLAN (1987) - REMAINING POTENTIAL IS 62000 SQ.M. OF WHICH 5000 SQ.M. IS NON-RES. USES AND REST, OR 600 UNITS, ARE RESIDENTIAL UNITS
- THEREFORE, FOR THIS ANALYSIS, AN AVERAGE OF 7000 SQ.M. OF NON-RES. USES AND 620 RESIDENTIAL UNITS WAS USED

ASSUMPTIONS:
Office Space per Worker: 28 sq.m.
Other non-residential space per worker: 45 sq.m.
Attendance/Vacancy Rate: 85%
Peak Hour Factor: 55%
Modal Split: 55% for office and other non-residential uses (reverse/outbound flow estimated at 10% of inbound trips)
45% for residential uses (reverse/inbound flow is estimated at 25% of outbound trips)

(1) SOURCE: CITY PLANNING AND DEVELOPMENT DEPARTMENT
(2) SOURCE: TRANSPORTATION ASSESSMENT OF THE GATEWAY CENTRE: PROPOSED MIXED USE DEVELOPMENT AT BATHURST AND LAKE SHORE BLVD. (B-A Consulting Group Ltd., 1988)
Loblaws Proposal:
- 719,524 sq.ft office (66,916 sq.m.)
- 95,421 sq.ft retail (8,874 sq.m.)
- 125,000 sq.ft art studios (11,625 sq.m.)
- 600 room hotel

TABLE A-3

DEMAND ANALYSIS : EXHIBITION PLACE
AM PEAK HOUR

DEVELOPMENT	AVERALE SHOW SIZE (SQ.M.)	TOTAL PERSON TRIPS PER DAY (ONE WAY)	TOTAL AUTO TRIPS	AVERAGE TRANSIT PERSON TRIPS PER DAY (ONE WAY)	LOW ALL DAY TRANSIT TRIPS		LOW PEAK HOUR PEAK DIRECTION TRANSIT TRIPS		HIGH ALL DAY TRANSIT TRIPS		HIGH PEAK HOUR PEAK DIRECTION TRANSIT TRIPS	
					EAST	NORTH	EAST	NORTH	EAST	NORTH	EAST	NORTH
C.N.E.												
(1) BASE SCENARIO												
1991	13300	5000	3300	1700	1000	1200	75	100	2200	1200	165	100
2001	14536	6500	3300	3200	1650	1200	125	100	5200	1200	400	100
(2) SCENARIO A												
1991	13300	5000	2400	2600	1000	1200	75	100	4000	1200	300	100
2001	15996	10000	4000	6000	3200	1200	250	100	10800	1200	800	100

NOTES:
Base scenario: no added exhibit space
Scenario A: An additional 69750 sq.m. of exhibit space opening in 1992

TOTAL PERSON TRIPS:
- based on 1987 data
= total auto trips + total transit trips
= average total person trips for 1986 (4100) adjusted for each scenario to reflect percentage change in amount of exhibit space from 1986

TOTAL AUTO TRIPS
- calculated based on average auto utilization per day and multiplied by 1.3 persons per vehicle.
- average auto utilization is the average number of parking spaces utilized on a daily basis for trade shows.
- calculated using annual parking revenue estimates, parking rate estimate and 270 operating days per year.

TOTAL TRANSIT TRIPS
- based on information received from TTC re: existing ridership on the Bathurst Streetcar and Dufferin bus routes to Exhibition Place
- ridership to C.N.E. for non-special, non-summer day = 1800 total passengers per day
- 1200 via Dufferin bus; 600 via Bathurst Streetcar.

ALL DAY TRANSIT TRIPS
- a low and a high forecast is presented for each scenario to reflect possible increases in transit ridership due to parking constraints at Exhibition Place
- a low forecast is based on percentage increases in space utilization
- a high forecast is based on percentage increases in space utilization and forecast increases/decreases in parking utilization.
- peak hour/peak direction trips are assumed to be 7.5% of total all day trips

TABLE A-4

DEMAND ANALYSIS : WORLD'S FAIR 2000

AM PEAK HOUR

DIRECTION	TRANSIT SERVICE	INBOUND	OUTBOUND
EAST	GO	555	0
	TTC SURFACE	40	0
	HLRT	150	0
WEST	GO	1115	0
	TTC SURFACE	185	0
NORTH	GO	225	0
	TTC SURFACE	150	0
	TTC SUBWAY	1285	0
TOTAL		3705	0

AM SITE PEAK HOUR

DIRECTION	TRANSIT SERVICE	INBOUND	OUTBOUND
EAST	GO	8135	370
	TTC SURFACE	540	25
	HLRT	2170	100
WEST	GO	16270	740
	TTC SURFACE	2710	125
NORTH	GO	3255	150
	TTC SURFACE	2170	100
	TTC SUBWAY	18980	865
TOTAL		54230	2475

NOTES:
"Exhibition Place Site" = Exhibition Place, Ontario Place and Parkland
Above analysis based on a feasibility study by B-A Consulting Group re: the World's Fair

TABLE A-5

AM PEAK HOUR TRANSIT TRIPS (INBOUND)

	TRIPS	GO TRANSIT	T.T.C						
		TOTAL GO TRANSIT TRIPS (20%)	TOTAL TTC TRIPS (80%)	FROM SUBWAY (82%)				6% LOCAL EAST-WEST ROUTES	12% CENTRAL AREA
				25% BLOOR-DANFORTH EAST	27% YONGE NORTH	11% SPADINA NORTH	19% BLOOR-DANFORTH WEST		
RAILWAY LANDS - PRECINCTS A,8,9, 10,11,12,13,	4920	984	3936	984	1063	433	748	236	472
HARBOURFRONT									
- SPADINA QUAY	169	34	135	34	36	15	26	8	16
- BATHURST QUAY	261	52	209	52	56	23	40	13	25
- REMAINING DEV. POTENTIAL AT HBFT.	105	21	84	21	23	9	16	5	10
- STADIUM RD. PROP.	86	17	69	17	19	7	13	4	9
- LOBLAWS PROPOSAL	1042	208	834	209	225	92	158	50	100
ISLAND AIRPORT	375	75	300	75	81	33	57	18	36
ONTARIO PLACE	450	90	360	90	97	40	68	22	43
SUB-TOTAL	7408	1481	5927	1482	1600	652	1126	356	711
C.N.E.									
- BASE SCENARIO - 2001	225 - 500	45 - 100	180 - 400	45 - 100	48 - 108	20 - 44	34 - 76	11 - 24	22 - 48
- SCENARIO "A" - 2001	350 - 900	70 - 180	280 - 720	70 - 180	75 - 194	31 - 79	53 - 137	17 - 43	34 - 87
- WORLD'S FAIR TOTAL	3705	1889	1815	453	490	200	345	109	218
Ont. Pl. + Base Scen.	7633 - 7908	1526 - 1581	6107 - 6327	1527 - 1582	1648 - 1708	672 - 696	1160 - 1202	367 - 380	733 - 759
Ont. Pl. + Base Scen. + Scenario "A"	7983 - 8808	1596 - 1761	6387 - 7047	1597 - 1762	1723 - 1902	703 - 775	1213- 1339	384 - 423	767 - 846
Ont. Pl. + Base Scen. + World's Fair	11338-11613	3415 - 3470	7922 - 8142	1980 - 2035	2138 - 2198	872 - 896	1505 - 1547	476 - 489	951 - 977

NOTES:

ISLAND AIRPORT - RANGE OF 250-500 PEAK HOUR TRANSIT TRIPS. THEREFORE AVERAGE OF 375 TRANSIT TRIPS USED.
- Source: 1976 Island Airport Access Study

ONTARIO PLACE - FUTURE PLANS UNKNOWN. YEAR ROUND OPERATION ASSUMED. THEREFORE EXISTING SUMMER PEAK HOUR, PEAK DIRECTION RIDERSHIP ASSUMED (INCLUDES DUFFERIN BUS, BATHURST STREETCAR AND NEW ONTARIO PLACE SERVICE)

C.N.E. - BASE SCENARIO: 2001: NO ADDED EXHIBIT SPACE
- SCENARIO "A" 2001: 69,750 SQ.M. OF ADDITIONAL EXHIBIT SPACE OPENING IN 1992.
- Source: 1987 Report of the Executive Task Force on Future Uses of Exhibition Place

WORLD'S FAIR - DISTRIBUTION BETWEEN GO TRANSIT AND TTC IS 51% GO TRANSIT / 49% TTC DUE TO GO TRAIN SHUTTLE BETWEEN UNION STATION AND EXHIBITION PLACE
- Source: Provincial Government Report investigating the possibility of a World's Fair at Exhibition Place/Ontario Place

TRIP DISTRIBUTION:

TRANSIT TRIPS - 20% GO TRANSIT
- 80% TTC
  - 6% FROM LOCAL EAST-WEST ROUTES
  - 12% FROM CENTRAL AREA
  - 82% FROM SUBWAY - 27% FROM NORTH VIA YONGE LINE
    - 25% FROM EAST VIA BLOOR-DANFORTH LINE
    - 19% FROM WEST VIA BLOOR-DANFORTH LINE
    - 11% FROM NORTH VIA SPADINA LINE

TABLE A-6

SUMMARY OF DEMAND PER ALIGNMENT OPTION (AM PEAK HOUR INBOUND)

ALIGNMENT OPTIONS	TRIPS THROUGH UNION STATION THAT WOULD USE HLRT *
OPTIONS 1A AND 1B:	
- All Spadina Quay	139
- All Bathurst Quay	215
- All remaining Nbft.	86
- All Stadium Rd. prop.	71
- All Loblaws Proposal	859
- All Airport	309
- Ontario Place	371
Sub-Total	2050
- C.N.E.	
- Base Scen.	186 - 412
- Scen. "A"	288 - 741
- World's Fair	1360
TOTAL	
- With Base Scen.	2236 - 2462
- With Scen. "A"	2338 - 2791
- With World's Fair	3410
- Base Scen + Scen "A"	2524 - 3203
- Base Scen + W. Fair	3596 - 3822

ALIGNMENT OPTIONS	TRIPS THROUGH UNION STATION THAT WOULD USE HLRT *
OPTIONS 2A AND 2B	
- All Spadina Quay	139
- All Bathurst Quay	215
- All remaining Nbft.	86
- All Stadium Rd. prop.	71
- Loblaws prop. - 25%	644
- All Airport	309
- Ontario Place	371
Sub-Total	1835
- C.N.E.	
- Base Scen.	186 - 412
- Scen. "A"	288 - 741
- World's Fair	1360
TOTAL	
- With Base Scen.	2021 - 2247
- With Scen. "A"	2123 - 2576
- With World's Fair	3195
- Base Scen + Scen "A"	2309 - 2988
- Base Scen + W. Fair	3381 - 3607

ALIGNMENT OPTIONS	TRIPS THROUGH UNION STATION THAT WOULD USE HLRT *
OPTIONS 3A, 3B, 3C, 3D	
- Spadina Quay - Block B: - 25%	0
- Spadina Quay - Blocks A, C, D.	139
- Bathurst Quay - Blocks 1 and 3	105
- Bathurst Quay - Blocks 2 and 4: - 10%	100
- Remaining Nbft. - 10%	77
- Stadium Rd. prop. - 10%	64
- All Loblaws prop.	859
- Airport: - 25%	232
- Ontario Place	371
Sub-Total	1947
- C.N.E.	
- Base Scen.	186 - 412
- Scen. "A"	288 - 741
- World's Fair	1360
TOTAL	
- With Base Scen.	2133 - 2359
- With Scen. "A"	2235 - 2688
- With World's Fair	3307
- Base Scen + Scen "A"	2421 - 3100
- Base Scen + W. Fair	3493 - 3719

* TRIPS THROUGH UNION STATION: - GO TRANSIT TRIPS
- TTC SUBWAY TRIPS - BLOOR/DANFORTH EAST (25%)
- YONGE NORTH (27%)
- SPADINA NORTH (11%)
- TTC SURFACE TRANSIT TRIPS - LOCAL EAST/WEST ROUTES (3%)
- CENTRAL AREA ROUTES (12%)

TABLE A-6
(continued)

ALIGNMENT OPTIONS	TRIPS THROUGH UNION STATION THAT WOULD USE HLRT *
OPTION 4A	
- Spadina Quay - Blocks C and D	61
- Spadina Quay - Blocks A and B: - 50%	47
- No Bathurst Quay	0
- Remaining Nbft. - 75%	22
- No Stadium Rd. prop.	0
- No Loblaws proposal	0
- No airport	0
- Railway Lands	2854
- Ontario Place	371
Sub-Total	3355
- C.N.E.	
- Base Scen.	186 - 412
- Scen. "A"	288 - 741
- World's Fair	1360
TOTAL	
- With Base Scen.	3541 - 3767
- With Scen. "A"	3643 - 4096
- With World's Fair	6660
- Base Scen + Scen "A"	3829 - 4508
- Base Scen + W. Fair	4901 - 5127

ALIGNMENT OPTIONS	TRIPS THROUGH UNION STATION THAT WOULD USE HLRT *
OPTION 4B	
- Spadina Quay - Blocks C and D	61
- Spadina Quay - Blocks A and B: - 50%	47
- Bathurst Quay: - 50%	131
- Remaining Nbft. - 50%	43
- Stadium Rd. prop. - 50%	36
- All Loblaws prop.	859
- No airport	0
- Railway Lands	2854
- Ontario Place	371
Sub-Total	4402
- C.N.E.	
- Base Scen.	186 - 412
- Scen. "A"	288 - 741
- World's Fair	1360
TOTAL	
- With Base Scen.	4588 - 4814
- With Scen. "A"	4690 - 5143
- With World's Fair	7707
- Base Scen + Scen "A"	4876 - 5555
- Base Scen + W. Fair	5948 - 6174

APPENDIX B

DETAILED DESCRIPTIONS OF ALTERNATIVE ALIGNMENT OPTIONS

APPENDIX B
Detailed Descriptions of Alternative Alignment Options

Alignment 1 Options

Alignment 1 options would commence at Spadina Avenue and Queen's Quay and extend west along the centre of Queen's Quay in a dedicated, at grade right-of-way, to the intersection with the future Portland Street. In this section, platforms would be provided at Spadina Avenue and at Portland Street. To accommodate exclusive right-of-way LRT operation, the existing 20 metre right-of-way would have to be widened to approximately 27 metres at mid-block locations and to 31 metres at platform locations which would also include left turn lanes. West of Portland Street, two alignment sub-options were identified.

Option 1A - Queen's Quay/Bathurst Street/Fleet Street (Grade-separated)

From Portland Street the LRT would descend into a portal on Queen's Quay, just east of Bathurst Street. A right-of-way of approximately 29 metres would be required to accommodate the ramp and portal for the LRT. The below-grade structure would extend north on Bathurst Street, underpass Lake Shore Boulevard and the LRT would ascend from a portal on Fleet Street in the vicinity of the Molson's property. The grade separation is necessary in order to avoid creating severe traffic operational problems at the Bathurst Street/Fleet Street/Lake Shore Boulevard intersection. A below-grade platform would be provided on Bathurst Street, south of Lake Shore Boulevard, with sidewalk entrances on each side.

It would be possible for the Bathurst streetcar to be connected to the HLRT below-grade by providing a ramp and a portal on Bathurst Street, north of Lake Shore Boulevard. However, this may be impractical and unjustifiable because of the high costs and would require further study

if this alignment was preferred. A sub-option to the below-grade connection for the Bathurst streetcar is to have the line proceed south through the intersection to a future turn-back loop south of Queen's Quay.

West of Bathurst Street, the LRT would operate in the centre of Fleet Street in a dedicated right-of-way to Strachan Avenue. Platforms would be provided to serve the local industry along this section of the alignment.

Option 1B - Queen's Quay/Bathurst Street/Lake Shore Boulevard

From Portland Street, the LRT would proceed westerly at grade along Queen's Quay to Bathurst Street. The right-of-way width at Portland Street would be approximately 31 metres to accommodate platforms and an eastbound to northbound left turn traffic lane. From Queen's Quay, the line would continue northward in the centre of the 32 metre Bathurst Street right-of-way to the south side of Lake Shore Boulevard, then westerly on the south side of Lake Shore Boulevard to the vicinity of the HMCS York entrance road. The Bathurst streetcar line would proceed through the intersection and south on Bathurst Street on the LRT tracks to a turn back loop south of Queen's Quay. It is highly desirable, from a pasenger service and operations point of view, for the Bathurst streetcar to opearate continuously to the west into the Exhibition Place area. Service to the west could be provided on Fleet Street by relocating the existing tracks to suit the revised traffic lanes, or crossing the Bathurst Street southbound traffic lanes and connecting to the LRT.

A sub-option of the Bathurst Street leg would consist of moving the LRT line to the west side of Bathurst Street between Queen's Quay and Lake Shore Boulevard and making a direct connection to the south side of Lake Shore Boulevard without crossing traffic lanes. The four north-south traffic lanes on Bathurst Street would be located east of the LRT

within the remaining street right-of-way. The Bathurst streetcar line would proceed through the intersection, south on Bathurst Street in mixed traffic, to a turn back loop south of Queen's Quay. Service to the west on Fleet Street could remain by relocating the existing streetcar tracks to suit the revised traffic lanes. Alternatively, the tracks could be extended south and connected to the LRT on the south side of Lake Shore Boulevard. The implications, benefits and disbenefits of this sub-option require further study. However, it should be noted that the right-of-way requirements for this sub-option are identical to the requirements of the Bathurst Centre-line sub-option.

West of HMCS York, the alignment would continue within a 12 metre right-of-way along the south side of Lake Shore Boulevard to Strachan Avenue. Alternatively, the LRT could cross from the south side of Lake Shore Boulevard to Fleet Street midway between Stadium Road and Strachan Avenue and continue via Fleet Street to Exhibition Place. Platforms would be provided in the Bathurst Street/Lake Shore Boulevard area to serve local industry and residential development.

West of Bathurst Street both alignments are within the existing road right-of-way on Metropolitan owned property.

Alignment 2 Options

Alignment 2 options commence at Spadina and Queen's Quay and extend west along the centre of Queen's Quay in a dedicated at-grade right-of-way from Spadina Avenue to Portland Street. From Portland Street, the LRT would continue west to the intersection of Queen's Quay and Stadium Road. Platforms would be provided at Spadina Avenue, Portland Street and Bathurst Street. For the section between Bathurst Street and Stadium Road, the existing 20 metre right-of-way cannot be widened because of existing residential development on both sides of Queen's Quay. Therefore, only two traffic lanes and the dedicated LRT

right-of-way could be accommodated with no provision for on-street parking. Alternatively, grade separation could be provided at substantial cost in order to maintain the existing roadway.

A loop would be provided south of Queen's Quay to allow for the Bathurst streetcar to turn back. A direct connection to the Harbourfront LRT could be made at the Queen's Quay/Bathurst Street intersection. As well, the existing Bathurst streetcar service could be maintained along Fleet Street. West of Stadium Road, two sub-options were identified.

Option 2A - Queen's Quay/HMCS York/Lake Shore Boulevard

From Stadium Road, the LRT would proceed west through private property south of Dylex, then swing north along the east side of the HMCS York property, to the south side of Lake Shore Boulevard. The line would continue westerly along the south side of Lake Shore Boulevard to Strachan Avenue.

The LRT for this section of the alignment is proposed to be at-grade within a 12 metre right-of-way. Platforms are proposed at Stadium Road. Platforms can also be accommodated further west, as required, for this section. A sub-option consists of extending the HMCS York north-south leg northerly across Lake Shore Boulevard to Fleet Street and continuing west along Fleet Street to Strachan Avenue in a dedicated right-of-way.

Option 2B - Queen's Quay/South side of Coronation Park

From Stadium Road, this alignment would proceed through private property and would then rise to be elevated in front of the HMCS York wharf facility. This proposal requires extensive investigation with appropriate agencies to confirm the design requirements for the LRT and the feasibility of locating the line in this area. West of the HMCS York property, the line would return to grade within Coronation Park

and proceed along the south side of the park to the vicinity of Strachan Avenue. The LRT right-of-way for the elevated structure is 10 metres and increases to 12 metres for the at-grade section through Coronation Park.

Alignment 3 Options

Alignment 3 options would utilize the HLRT Spadina loop to access Lake Shore Boulevard and would then proceed westerly via Lake Shore Boulevard to Strachan Avenue or swing north to Fleet Street and then proceed to Strachan Avenue. Five sub-options were identified, three of which would run on the south side of Lake Shore Boulevard (3A grade separated, 3A at grade and 3B grade separated) and two in the centre of Lake Shore Boulevard (3C and 3D). Options 3C and 3D would run north and then west across the Spadina/Lake Shore intersection and proceed west at-grade in a 7 metre dedicated right-of-way, along the centre of Lake Shore Boulevard, immediately adjacent to the Gardiner expressway eastbound off ramp to Spadina Avenue. In the vicinity of Bathurst Street, this alignment would either be grade separated (Option 3C) or at grade (Option 3D).

Option 3A - South Side of Lake Shore Boulevard (grade-separated)

At Portland Street, the LRT would descend to a portal (in a 9 metre right-of-way), proceed below-grade past the MTV and Loblaws buildings, undercross Bathurst Street and then ascend, in a 9 metre right-of-way, from a portal in the vicinity of the Cooperative residences just west of Bathurst Street. From Stadium Road, the LRT would continue in a 12 metre right-of-way at-grade along the south side of Lake Shore Boulevard to Strachan Avenue. Platforms could not be accommodated at Portland Street because of the LRT portal. At Bathurst Street, below-grade platforms are proposed and platforms could be provided, as appropriate, west of Bathurst Street.

The Bathurst streetcar line could be extended south through the Lake Shore Boulevard intersection to a turnback loop located south of Queen's Quay. A direct connection to the below-grade LRT is considered impractical because it would require that the underground LRT structure be extended and, as a result, the ramp structure would cut off access to Stadium Road from Lake Shore Boulevard.

Option 3A - South Side of Lake Shore Boulevard (at grade)

This option is the same as Option 3A (grade-separated) except that through the Bathurst Street/Lake Shore Boulevard intersection, the LRT would operate at grade.

Option 3B - South Side of Lake Shore Boulevard/Fleet Street (Grade Separated)

At Portland Street the LRT would descend into a portal in a 9 metre right-of-way, proceed below-grade past the MTV and Loblaws buildings, undercross Bathurst Street and then ascend, in a 9 metre right-of-way, from a portal just west of Bathurst Street on Fleet Street. From this point the LRT would continue westerly in a dedicated 7 metre right-of-way along Fleet Street to Strachan Avenue. Platforms would be provided below-grade at Bathurst Street and can be provided, as appropriate, in the sections east and west of Bathurst Street. However, platforms are precluded at Portland Street by the LRT ramp.

The at-grade Bathurst streetcar line could be extended south through the Lake Shore Boulevard intersection to a turnback loop located south of Queen's Quay. A direct connection to the below-grade LRT structure is considered impractical because it requires that the Fleet Street ramp and portal be extended to the west in front of Molson's at considerable cost.

Option 3C - Centre of Lake Shore Boulevard (grade-separated)

At Portland Street, the LRT would descend to a portal, in a 9 metre

right-of-way. The LRT would remain below-grade past the MTV and Loblaws buildings, undercross Bathurst Street and ascend to grade in the vicinity of Stadium Road in the centre of Lake Shore Boulevard. From that point it would continue in the centre of Lake Shore Boulevard in a 7 metre dedicated right-of-way to Strachan Avenue. Platforms are proposed below-grade at Bathurst Street with sidewalk entrances, and in the vicinity of Molsons. Platforms would be provided, as appropriate, west of Bathurst Street.

The at-grade Bathurst streetcar line would be extended south through the Lake Shore Boulevard intersection to a turnback loop located south of Queen's Quay. A direct connection to the below-grade LRT structure is considered impractical because it would require that the Bathurst Street platforms be moved east of the street and the west LRT up-ramp and portal be moved further west. This would add considerable cost to the option and would reduce vehicle accessibility to Stadium Road.

Option 3D - Centre of Lake Shore Boulevard (at-grade)

The LRT would proceed at-grade from Spadina Avenue to Strachan Avenue in the centre of Lake Shore Boulevard. The LRT right-of-way is generally 7 metres wide between platforms and 8 to 9 metres wide at the platform areas, depending on the configuration. Platforms are proposed at Portland Street, Bathurst Street and in the vicinity of Molson's.

The Bathurst streetcar line would extend south through the Lake Shore Boulevard intersection to a turnback loop south of Queen's Quay. A direct connection to the Harbourfront LRT could be provided within the intersection depending on the impact on future traffic operations.

Alignment 4 Options

Alignment 4 options would commence at the Spadina loop and

proceed north to the intersection of Spadina Avenue and the future Esplanade Street. The lines then proceed westerly along the centre of Esplanade Street in a dedicated right-of-way to Bathurst Street. At Bathurst Street two sub-options were identified.

Option 4A - Esplanade/Private Properties/Fleet Street

This alignment would continue west from Bathurst Street, swing south and undercross the Gardiner Expressway through private properties. The line would then jog westerly along the back of the Molson's building and would be elevated through this area. The LRT would return to grade just east of the Armouries and would continue along Fleet Street in a dedicated right-of-way to Strachan Avenue. Platforms are proposed at Spadina Avenue, Portland Street and Bathurst Street for the at-grade portion. Platforms are not practical in the elevated section.

The proposed 30 metre street right-of-way for Esplanade Street is sufficient to accommodate the dedicated 7 metre LRT right-of-way, the required traffic lanes and sidewalks. At the platform areas, the LRT right-of-way increases to approximately 9.5 metres. A 12 metre LRT right-of-way is required for the at-grade section through the private properties and a 10 metre right-of-way is required for the elevated segment.

Option 4B - Esplanade/Bathurst Street/Fleet Street

At Bathurst Street this alignment would turn south and cotinue to Fleet Street in a dedicated right-of-way in the centre of Bathurst Street. At that point the line would continue west to Strachan Avenue in a dedicated right-of-way on Fleet Street. Platforms are proposed at Spadina Avenue, Portland Street, Bathurst Street and Molson's.

The proposed 30 metre street right-of-way for Esplanade Street, east of Bathurst Street, is sufficient to accommodate the dedicated 7 metre

LRT right-of-way, the required traffic lanes and sidewalks. In order to accommodate a dedicated LRT right-of-way on Bathurst Street, between Esplanade Street and Fleet Street, the existing right-of-way would need to be widened by approximately 1 to 2 metres.

For options 4A and 4B, the Bathurst streetcar would use the LRT tracks between Esplanade and Fleet Street with the option of continuing west along Fleet Street into the Fleet Street loop at Exhibition Place, or alternatively, proceed directly south through the Lake Shore Boulevard intersection to a turnback loop south of Queen's Quay.

APPENDIX C

EVALUATION OF ALIGNMENT OPTIONS

TABLE C-1

GENERAL CRITERIA

	OPTION 1A	OPTION 1B	OPTION 2A	OPTION 2B	OPTION 3A	OPTION 3B	OPTION 3C	OPTION 3D	OPTION 4A	OPTION 4B
Serves Hbft, CNE, Ontario Place, Railway Lands	Directly: Spad. and Bathurst Quays, Loblaws, Molson's, CNE, Airport. Indirectly: Ont. Place. Not at all: Rlwy Lands.	Directly: Spad. and Bathurst Quays, Loblaws, Molson's, CNE, Airport, Ont. Place. Not at all: Rlwy Lands.	Directly: Spad. and Bathurst Quays, Airport, CNE, Ontario Place. Indirectly: Loblaws, Molson's (depending on stop location). Not at all: Rlwy Lands.	Directly: Spad. and Bathurst Quays, Airport, Ont. Place. Indirectly: CNE, Loblaws. Not at all: Rlwy Lands, Molson's.	Directly: East half of Spad. Quay, Loblaws, CNE, Ontario Pl, Molson's, Bathurst Quay. Indirectly: west half of Spad. Quay, Airport, res. areas at south end of Railway Lands.	Directly: East half of Spad. Quay, Loblaws, CNE, Molson's, Bathurst Quay. Indirectly: west half of Spad. Quay, Airport, Ontario Place, res. areas at south end of Railway Lands.	Directly: East half of Spad. Quay, Loblaws, CNE, Ontario Pl, Molson's, Bathurst Quay. Indirectly: west half of Spad. Quay, Airport, res. areas at south end of Railway Lands.	Directly: East half of Spad. Quay, Loblaws, CNE, Ontario Pl, Molson's, Bathurst Quay. Indirectly: west half of Spad. Quay, Airport, res. areas at south end of Railway Lands.	Directly: East half of Spad. Quay, Railway Lands, CNE, Molson's (depending on stop loc) Indirectly: Ont. Place. Not at all: West half of Spad. Quay, Bathurst Quay, Airport, Loblaws.	Directly: East half of Spad. Quay, Railway Lands, Loblaws, CNE, Molson's. Indirectly: Ont. Place, Airport, Bathurst Quay. Not at all: West half of Spad. Quay.
Attractiveness of alignment from riders' perspective - user convenience - accessibility	direct ride/not circuitious, provides very convenient access to most locations		direct ride/not circuitious, provides convenient access to most locations, quick ride to CNE and to Ontario Place	picturesque ride	fairly direct ride, provides less convenient access to most locations	direct ride	direct ride	direct ride	does not provide good access to most locations circuitious route to Ontario Place and CNE, provides convenient access to Railway Lands,	provides fairly good access to most locations
Potential for extension west of CNE/Ont.Pl.				ALL	OPTIONS	CAN BE	EXTENDED	WESTERLY		
			NOTE: IF CURRENT LAND USE MAINTAINED AT CNE, IT MAY BE MORE DIFFICULT TO EXTEND LINE WESTERLY THROUGH CNE GROUNDS.							
Development impacts - on existing development - on future development	441 Queen's Quay Spadina Quay Pk, Parcel "A". Impact on gas station at SW corner of Bath./Lake Shore int. if LRT on west side of Bathurst vs. centre	441 Queen's Quay Spadina Quay Pk, Parcel "A", Co-ops on south side of Lake Shore	Significant impacts on Co-ops (change character of street, no parking will be allowed)		Impact on Co-ops on south side of Lake Shore Impact on parking lot at SW corner of Spadina and Lake Shore. Generally, impacts not at significant for option #3's than for other options			Squeeze between Loblaws historical" bldg and Ch. 47	Unworkable option from devt point of view. Significant impact on Loblaws and Fort York. Complicated ownership/easement problems	
Compatibility with Metro and City Official Plans	ANY LRT EXTENSION WILL REQUIRE A METROPOLITAN OFFICIAL PLAN AMENDMENT ANY WIDENING OF QUEEN'S QUAY WILL REQUIRE SUB-AREA PLAN AMENDMENTS				OPTIONS THAT ARE NOT ON QUEEN'S QUAY WILL HAVE LEAST IMPACT ON SUB-AREA PLANS					

TABLE C-1
(continued)

GENERAL CRITERIA

	OPTION 1A	OPTION 1B	OPTION 2A	OPTION 2B	OPTION 3A	OPTION 3B	OPTION 3C	OPTION 3D	OPTION 4A	OPTION 4B
Operational feasibility - transit - roads	Transit: Good if grade separated at Bathurst & Lake Shore; may encounter prob's with location of Bathurst St.car Loop Roads: NB LT may introduce too much confusion at Bathurst/Lake Shore int.if LRT at grade. If int.is grade-seperated, decrease in capacity can be handled at Bath./Lake Shore int. ROADS: Queen's Quay/Spadina: 11 - 17% decrease in capacity - should not be a problem Queen's Quay/Bathurst: 11 - 17% reduction in capacity - should not be a problem	Transit: since option is not gr. separated, Bath./Lake Shore int.more complex	Transit: operationally good assuming exclusivity ROADS: Queen's Quay/Spadina: 11 - 17% reduction in capacity - should not be a problem Queen's Quay/Bathurst: 11 - 17% reduction in capacity - should not be a problem	Transit: operationally good assuming exclusivity	Transit:feasible at Spadina Loop but not desirable ROADS: Queen's Quay/Spadina: 11 - 17% reduction in capacity - this should not be a problem Lake Shore/Spadina: 18 - 20% reduction in capacity in order to accomodate movements - this intersection may not withstand this decrease in capacity (more detail is required) Bathurst/Lake Shore: if options are grade separated, reduction in capacity can be handled; if at grade, decrease in capacity cannot be handled	Transit:feasible at Spadina Loop but not desirable	Transit: impractical, expensive, major problems with centre alignment on Lake Shore	Transit: impractical, expensive, major problems with centre alignment on Lake Shore; since this option is at grade at Bath./ Lake Shore,not as attractive as other option 3's	Transit: poor operationally ROADS: Queen's Quay/Spadina: 11 - 17% reduction in capacity - should not be a problem Lake Shore/Spadina: 18 - 20% reduction in capacity - this intersection cannot withstand this reduction in capacity Spadina/Esplanade: 12 - 13% reduction in capacity - will be looked at in more detail (ie. v/c ratios to det. if int. can handle this decrease) Bathurst/Esplanade: 18% reduction in capacity - since this is a T-intersection, this reduction can be handled	Transit: poor operationally Roads: if grade separated, decrease in capacity can be handled

TABLE C-1
(continued)

ENVIRONMENTAL IMPACTS

	OPTION 1A	OPTION 1B	OPTION 2A	OPTION 2B	OPTION 3A	OPTION 3B	OPTION 3C	OPTION 3D	OPTION 4A	OPTION 4B
Impact on natural env't - air quality - soil quality - groundwater quality	NO PERMANENT IMPACT ON AIR QUALITY, SOIL QUALITY OR GROUNDWATER QUALITY									
Impact on social environment - property	impact on 441 Queen's Quay WEst and Spadina Quay	Impact on Co-ope on south side of Lake Shore Park	significant impacts on Co-ope on south side of Lake Shore		impacts on Co-ope, impacts due to option 3's not as significant as those of other options				significant impacts on existing dev't	impact on hist. bldg. at NE corner of Bath. and Lake Shore
- transit	oper. feas. good if grade-sep. at Bath./ Lake Shore		operationally feasible if in exclusive ROW		operationally feasible		major problems re: operational feasibility		poor operationally	
- roads	Queen's Quay/Spadina will experience reduction in capacity - should not be a problem				Le...more/Spadina will experience reduction in capacity that probably cannot be handled Bathurst/Lake Shore will experience reduction in capacity if option at grade - this probably cannot be handled at this intersection				Lake Shore/Spadina - reduction in capacity will be a problem Spadina/Esplanade - will be looked at in more detail to determine if reduction in capacity can be handled	
- noise - vibration	- noise could be significant depending on location of studios King's Landing, Spadina Quay, Ch. 47	res. areas on south side of Lake Shore Blvd.	NMCS York dev'ts at Queen's Quay and Spad., all dev'ts west of Bathurst, Tip Top Building	impact on NMCS York not as significant	dev'ts on south side of Lake Shore King's Landing, Ch. 47	King's Landing, Ch. 47	* since no exp. running LRT underground, impact could be significant King's Landing, Ch. 47	dev'ts on south side of Lake Shore Tip Top building King's Landing, Ch. 47	Fort York, Armouries, dev'ts on north and south side of Esplanade	dev'ts on north and south side of Esplanade
Impact on economic env't - commerce and business - tourism	There is not much difference between options in terms of impacts on commerce and business Options 1, 2 and 3 may be more beneficial and attractive to Ontario Place									
Impact on cultural env't	Joins Harbourfront Activities				May act as a "perceived" barrier between activities				Does not join Harbourfront activities	
Impacts during construction - traffic - transit - housing - businesses	Some temporary impacts on air quality (ie. dust etc.) during construction Impacts on housing and businesses is the same by all options									

TABLE C-1
(continued)

MEASURABLE IMPACTS

	OPTION 1A	OPTION 1B	OPTION 2A	OPTION 2B	OPTION 3A	OPTION 3B	OPTION 3C	OPTION 3D	OPTION 4A	OPTION 4B
Cost - capital cost	$ 77 m. incl. below grade connection for Bathurst st.car	$ 30 m.	$ 27.25 m.	$ 31.25 m.	$ 54 m. ($34 m. at grade)	$ 52 m.	$ 60 m.	$ 34 m.	$ 32 m.	$ 36 m. does not include cost of reconst-ruction of Bath. bridge
- operating cost	$ 66 m. incl. at grade loop for Bathurst street car.	Very	little	difference	between	options	in terms	of	operating	costs
- land costs	land	costs	are	within	the	same	range		highest land costs	lowest land costs
Ridership demand - weekday AM peak hour	1. 2236-2462 2. 2524-3203 3. 5541-5767	1. 2236-2462 2. 2524-3203 3. 5541-5767	1. 2021-2247 2. 2309-2988 3. 5326-5552	1. 2021-2247 2. 2309-2988 3. 5326-5552	1. 2133-2359 2. 2421-3108 3. 5438-5664	1. 2133-2359 2. 2421-3108 3. 5438-5664	1. 2133-2359 2. 2421-3108 3. 5438-5664	1. 2133-2359 2. 2421-3108 3. 5438-5664	1. 3541-3767 2. 3829-4508 3. 6846-7072	1. 4588-4814 2. 4876-5555 3. 7893-8119
	Does not	include Railway	Lands	ridership	which would	be served	by other	services	Includes Rlwy	Lands ridership

RIDERSHIP DEMAND:
1. with Base Scenario at CNE (no added exhibit space)
2. with Base Scenario and Scenario "A" (69,750 sq.m. of additional exhibit space by 1992)
3. with Base Scenario and World's Fair

TABLE C-1
(continued)

ALIGNMENT OPTIONS

OPTION 1A:	QUEEN'S QUAY/BATHURST/NORTH SIDE OF LAKE SHORE-FLEET ST AND WEST TO STRACHAN AVE '(GRADE SEPARATED AT BATHURST AND LAKE SHORE)
OPTION 1B:	QUEEN'S QUAY/BATHURST/SOUTH SIDE OF LAKE SHORE TO STRACHAN AVENUE
OPTION 2A:	QUEEN'S QUAY/SOUTH AND WEST OF TIP TOP TAILORS/SOUTH SIDE OF LAKE SHORE
OPTION 2B:	QUEEN'S QUAY/SOUTH SIDE OF TIP TOP TAILORS/SOUTH SIDE OF CORONATION PARK
OPTION 3A:	SOUTH SIDE OF LAKE SHORE FROM SPADINA TO STRACHAN AVENUE.
OPTION 3B:	SOUTH SIDE OF LAKE SHORE/BATHURST/NORTH SIDE OF LAKE SHORE-FLEET TO STRACHAN AVE
OPTION 3C:	CENTRE ALIGNMENT ON LAKE SHORE FROM SPADINA TO STRACHAN (GRADE SEPARATED AT BATHURST AND LAKE SHORE)
OPTION 3D:	CENTRE ALIGNMENT ON LAKE SHORE FROM SPADINA TO STRACHAN (AT GRADE AT BATHURST AND LAKE SHORE)
OPTION 4A:	SPADINA/ESPLANADE/PRIVATE PROPERTIES (NOLSONS)/FLEET STREET
OPTION 4B:	SPADINA/ESPLANADE/BATHURST/FLEET STREET

APPENDIX D

CITY OF TORONTO PLANNING AND DEVELOPMENT DEPARTMENT'S POSITION WITH RESPECT TO PREFERRED ALIGNMENT

Revised June 10, 1988

Westward Extension of the Harbourfront LRT (HLRT) - Conclusions of Planning and Development Department

The Working Committee has acknowledged, from the outset of the study, that existing demand figures are inadequate to justify the extension of the HLRT west of Spadina to either Ontario Place or Exhibition Place at this time. The future transit demand to these locations was examined in terms of continuation of existing levels of demand, and increases in demand associated with 1) a possible expansion of Exhibition Place; 2) a possible year round operation of Ontario Place; 3) a possible World's Fair in the year 2000; and 4) the possibility that the 1996 Olympic Games would be held in Toronto.

Given the extremely wide range of hypothetical future demand generated by these possibilities, the Committee could not fully address the relationship between anticipated demand for the HLRT west of Spadina, and the technology (LRT, a streetcar in mixed traffic, or bus service) appropriate to satisfying this demand.

It should further be noted that the ultimate destination of any extension has not been clearly identified. As a result, the task of the Committee was essentially limited to the identification of a preferred option for extending the HLRT from its present terminus at Spadina and Queen's Quay West to the general vicinity of Ontario Place and the CNE, should this prove necessary in the future.

The options which involved Queen's Quay West of Bathurst were generally considered undesirable because of their land use and social impacts, and the Esplanade options were considered too circuitous. Consequently, the Committee's final deliberations focused primarily on those alternatives which followed Queen's Quay to Bathurst and then swung north to Lake Shore (Queen's Quay/Bathurst option), and other alternatives which swung north to Lake Shore at Spadina (Lake Shore option). In other words, the critical issue essentially became whether a westerly extension of the HLRT should swing north onto Lake Shore at Spadina or at Bathurst.

The technical feasibility of both options has been recognized by the Working Committee. The Planning and Development Department's conclusions respecting these two options are based primarily on an assessment of the land use planning consequences of choosing one alignment or the other. These conclusions are as follows:

i) advantages of Lake Shore option:

If it is considered necessary to extend the HLRT westward, there are advantages to selecting a Lake Shore option over a Queen's Quay option when considered from a planning perspective. One major advantage of a Lakeshore alignment is its potential as a connector between the Railway Lands and Harbourfront; that is, the barrier effect of the Gardiner-Lakeshore corridor could be reduced by drawing transit users to the area. Furthermore, this option could serve both the southern portions of the Bathurst-Spadina Neighbourhood and the Spadina Sub-centre, and Harbourfront. A Queen's Quay option would serve only Harbourfront. Finally, it should be noted that the approved Spadina Quay Sub-Area Plan already includes a protected transit corridor on the south side of Lake Shore between Spadina and the proposed southerly extension of Portland Street.

ii) impact of Queen's Quay/Bathurst option on parkland in Harbourfront:

South of the King's Landing development, a widening of Queen's Quay to accommodate an exclusive right-of-way for an extended HLRT would have to be taken off the existing Spadina Gardens park to the south. The Commissioner of Parks and Recreation has estimated that the resulting necessity of redesigning Spadina Gardens park could cost as much as $600,000.00

If Queen's Quay is realigned to provide for an expanded Spadina Gardens park, lands required for a widened right-of-way west of King's Landing might be taken off the north side of the street. However, accommodating the widened right-of-way in this manner, while ensuring the achievement of a 40 acre parks plan as currently proposed, could conflict with the establishment of viable new development parcels, including a relocated parcel A for the Spadina Quay Sub-Area, on the north side of the street. This matter requires further detailed assessment.

iii) impact of Queen's Quay/Bathurst LRT on Harbourfront west of Spadina:

The character of Harbourfront changes west of Spadina from an intensely used and programmed area to a quieter, more residential part of the waterfront. The extension of the HLRT on a separate right-of-way westward along Queen's Quay could undermine this change in character, and in particular, could affect the residents of the

existing Kings Landing development and of any other developments to be constructed on the north side of Queen's Quay in the future in terms of increased noise and vibration.

In addition, depending on the exact alignment chosen, the Queen's Quay/Bathurst option, particularly if it is to run along the west side of Bathurst Street, could have a negative impact on the pedestrian environment in this part of Bathurst Quay, particularly in conjunction with the construction of a turning loop for the existing Bathurst streetcar, as discussed in Working Group meetings.

iv) impact of Queen's Quay/Bathurst option on the proposed development at 441 Queen's Quay West:

If a Queen's Quay alignment were to be chosen, the development currently proposed for 441 Queen's Quay would have to be redesigned in order to fit it onto the smaller lot, and the resulting change in building design would necessitate an amended Development Review application. Any substantial redesign and/or any encroachment onto or over either the public street or the Water's Edge Promenade would also require a new amendment to the Spadina Quay Sub-Area Plan. In addition, an encroachment onto or over the Water's Edge Promenade, other than the most minor, would require an amendment to the Harbourfront Zoning By-law. The reallocation of parkland already conveyed to the City to transportation uses (i.e., a road widening) could also require an amendment to the Harbourfront Master Agreement, and the City Solicitor may identify further agreements required to deal with matters related to the conveyancing of lands. These amendments and agreement, which could be contentious, will require some time to be processed.

In terms of the impact of a possible westerly extension of the HLRT on 441 Queen's Quay, the primary objective is to ensure that both the public sidewalk to the north of the proposed building and the Water's Edge Promenade, particularly the portion to the south, are protected from encroachments. The Water's Edge Promenade is a major public amenity to be secured through the development of Harbourfront, and is specifically identified and protected by a seven-metre set-back in the Harbourfront Zoning By-law.

Summary

Although the operational advantages of the Queen's Quay/Bathurst options are recognized, the technical feasibility of both options was acknowledged by the Committee. The considerations set out above argue in favour of bringing the HLRT north to Lake Shore two blocks further east, i.e., at Spadina rather than Bathurst. In addition, if reasonable development parcels are to be maintained to accommodate development now permitted on parcel A in the Spadina Quay Sub-Area Plan and on parcels to the west, it is probably not feasible to protect both the Queen's Quay/Bathurst option and the Lake Shore option. (In fact, Metro has indicated it would release the protected Lake Shore right-of-way if the Queen's Quay right-of-way is secured.) Consequently, it is the Planning and Development Department's position that, if any option for the westward extension of the HLRT is to be protected, a Lakeshore option is more desirable from a land use planning perspective, given the negative impacts associated with the Queen's Quay/Bathurst option.

However, if satisfactory solutions to the issues identified above could be secured, it might be possible to support the protection of a Queen's Quay/Bathurst right-of-way, even though there is at present no clearly established need for the LRT technology. In particular, if the issues associated with 441 Queen's Quay could be dealt with through either (i) an appropriate redesign of the building which did not involve an encroachment over either the Water's Edge Promenade or the public sidewalk, or (ii) a transfer of density to other parcels controlled by the same developer on the north side of Queen's Quay, the Planning and Development Department would be in a position to support the widening of Queen's Quay West, provided the necessary redesign of Spadina Gardens park was secured to the satisfaction of the Commissioner of Parks and Recreation and no other obstacles were encountered as part of any necessary review process.

The simplest way to resolve the issues related to 441 Queen's Quay, while protecting the option of extending the HLRT west along Queen's Quay to Bathurst, would be to reduce the size of the proposed building through a transfer of density to parcels controlled by the same developer on the north side of Queen's Quay. This would permit the building to fit onto a reduced site and conform to the City's development controls and planning policies for Harbourfront.